POPULAR Computing WEEKLY

Only 50p.

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Vol 5 No 40

Amstrad: new PC and Plus delayed

– both miss September deadline



▲ Starglider on the Atari ST

SOFTWARE EXCLUSIVE First look at Starglider and Fairlight II

◀ Fairlight II on the Spectrum

Music and micros: Free 16-page supplement

The Movie Quiz: £2,000 in prizes to be won

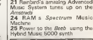


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Comdex launch planned for new ST series

ATARI's new-style STs, which were previewed at the PCW Show earlier this month, may now be launched at the US Comdex show in November, although outgoing UK general manager Max Baimbridge says the European launch is still scheduled for the Hanover Fair next spring, with a probable UK launch at the spring Atari User Show.

In their current form the machines are recased versions of the ST with detached (and probably slightly improved) keyboards and separate monitor and system box, the latter including a single disc drive. Expansion is catered for by a slim box the same size as the system unit containing extra floppy or hard drives, and price is expected to start at the same level as the 2Mb and 4Mb STs.

Later variants are likely to use the more powerful 68020 processor.

Atari has now decided against competing with Amstrad purely on price (see last week's issue) and will be maintaining the 520 as its entry level ST at £344 for the foreseeable future. According to Max Baimbridge the market below this level is determined purely by price rather than function and he sees no point in challenging the Amstrad PC on these terms. Instead Atari will be looking more to corporate and educational markets.

Atari to go public this autumn

ATARI is to go public next month, offering 15 per cent of its shares on the US stock market for between $11.50 and $13.50. The offer if taken up would value Atari at between $323 million and $380 million (£215 million to £253 million), and the fact that the company is able to make the offer at all is a spectacular achievement for Jack Tramiel, who bought it in a state of virtual bankruptcy from Warner Brothers just over two years ago.

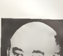
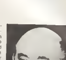
The public offer has been delayed over a year, indicating that the Tramiel family have found rescuing Atari a little trickier than they'd first anticipated. In December 1984 Jack Tramiel predicted that Atari would make stock offers in both 1985 and 1986, and the US analysts laughed. The company is, however, now back in profit, and nobody seems to be laughing.

The issue will raise a maximum of $60 million, practically on top of the $50 million Tramiel wanted nearly two years ago, and if as expected a further 25 per cent of the equity is assigned to Warner Brothers would leave the Tramiel family with 53 per cent of the company.

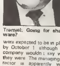
Tramiel being Tramiel it's thought unlikely that the family holding will be allowed to fall below this level.

Atari UK is meanwhile reorganising its management. UK general manager Max Baimbridge is moving to Taiwan to supervise Atari's factory there, while marketing manager Rob Harding is leaving the company (and the micro industry) in what is described as 'a career move'. The Taiwan factory employs around 15 000 people and produces most of Atari's micros.

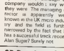
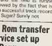
According to Baimbridge a new UK managing director and a marketing manager

Tramiel: Going for shareware?

were expected to be in place by October 1, although the company wouldn't say who they were. The managing director is apparently well known in the UK micro industry, and the field is further narrowed by the fact that he has a successful track record. Alan Sugar? Surely not.

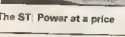
BT bids to build business in the US

FIREBIRD Licencees Inc, the company formed by British Telecom to sell software in the United States, is to enter the business market there this November with Laser Quill, which is sold here by Icon Technology as Macauthor.

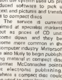
The program runs on the Macintosh, and according to FLI spokesman John Fletcher there's nothing like it on the market at the moment. It is a combination of word processor and desktop publishing system, and sells here for £199. The US price will be $199, which he describes as being significantly cheaper than alternative combinations of word processor and pagemaker software.

Macauthor was initially troubled by bugs, but FLI will be marketing version 1.2, where these have apparently been cured. Fletcher says the company will be launching further products in the business area shortly, and hopes to capitalise on the good reception products like Elite and The Pawn have already achieved in the States.

The ST: Power at a price



CD Rom transfer service set up by Pergamon



CD ROM systems took a step closer to reality this week as Mirrorsoft's sister company Pergamon Infoline launched Compact Solution, a new service to transfer data onto compact disc. According to Jim McConnachie of Mirrorsoft the system uses US produced software to pick up text and pictures and transfer it to compact discs.

The service is currently aimed at specialist markets, but as prices of CD units come down and they become more common in the computer industry Mirrorsoft is also likely to begin publishing material in compact disc format. McConnachie points at electronic publishing, where a compact disc could be used to store large quantities of fonts for the likes of Fleet Street Editor, as a possible application.

Boots Xmas plans slammed

BOOTS's software buying policy and its in-store promotional video are being called into question by software houses. A brochure detailing the retail chain's Christmas marketing plans solicits "entry fees" that will allow companies to "buy into our advertising". The Christmas campaign will be "based on the vigorous promotion of a limited number of carefully selected products".

The fees cover entry to the company's magazine and national press advertising, and "£15,000 per product gets you entry to Boots' Spearhead Lines" (75 products in all) which get prime display in both the catalogue and in 320 branches of Boots.

"By ensuring that your product is featured in our catalogue and our stores you can benefit from this advertising," says the brochure. There is no suggestion that Boots will only stock products if the supplier advertises in the company's catalogue, but a sppkesman for one software house felt the catalogue still pressured him. "It's a natural bar to what might be a very high quality product," he said. "Large software houses can afford to go into the catalogue, but small ones can't, which at the very least means they won't get press advertising and prominent display through Boots."

The promotional video is similarly restrictive, in that companies can't advertise on it unless they're featured, and although it includes a software chart this in no sense represents what customers have actually been buying. According to a spokesman for IDD Video, which produces the video, the chart is supplied each month by Boots, and is based on "buying decisions". What you therefore see is a list of what Boots thinks you ought to buy.

Boots declined to comment on how the video was produced, describing the matter as "company confidential". As far as the Christmas promotion is concerned a spokeswoman said that the company "worked together with the supplier to identify major sellers," and that "if someone is going to advertise their product it will have an impact on the product's sales".

Software Hotlines

Most fantasy scenarios have you, the Hero, boldly scything through Evil Hordes in defence of a Noble Cause. And so it is in Bo Jangeborg's *Fairlight II* – out early October – with the difference that it's all your fault.

Near the end of *Fairlight I* (you can skip the next few lines if you're still hard at it) you give a book to an old man and get something important in return.

Now it turns out that the book was The Book of Light and the little old man was the Lord of Darkness who has now done a runner across the ocean to plan the downfall of Life As We Know It, etc. Whoops.

Fairlight II starts outside the original castle and the first part is centred around the nearby peninsular where you must scurry around finding objects that might be of use to you later and teaming up with a female character somewhere along the line.

Finally you board a ship, and the second half has you playing away within the fortress of the Dark Lord as you attempt to find a way to destroy him and return the book to its rightful owners before you get the second reminder. The initial outside screens look good and a breathless Cheri Langdell from the **Edge** promises fans that *Fairlight II* will be more of the same and better.

Fairlight II

Imminent **Edge/Softek** releases also include their foray into the coin-op conversion game – *Shao-lin's Road* and *Arnst II* – an upgraded *Arnst I* chock full of drop-down menus together with some new pattern and window effects.

Followers of *The Archers* will be pleased to know the work on the game is continuing apace and we should have a finished copy soon – but news comes to us that **Mosaic** are continuing the huntin', shootin', fishin' vein by publishing an adventure based on that favounte occupation of the landed gentry, horseracing.

Based on the Dick Francis thriller *Twice Shy*, this will be a graphic adventure dealing with the shadier dealings of the race track but it will also include racing/betting simulation game as an integral part of the adventure although it is intended you'll be able to play it independently of the main program.

On starters orders right now my bookie says that if this gets to number one, Shergar's going to win the next Derby.

John Cook

Shao-lin's Road

More programmers sought by expanding Hewson

FLUSHED with the success of *Alleykat* and *Uridium*, Hewson is looking for more programmers to continue its "dramatic expansion". According to Andrew Hewson *Alleykat* could be an even bigger smash than *Uridium*, with advance orders more than twice what the company expected and 40 per cent up on *Uridium*, and this has prompted a search for both original authors and conversion programmers.

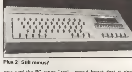
"If I got two original programmers I'd be satisfied," he says, "and as far as conversions are concerned there are four jobs waiting to be done with probably another four to get out of the way."

Currently Hewson is looking for experienced programmers but is also prepared to help people who have potential even if they don't have a track record.



Hewson: Bigger every day

Delays grow for Amstrad's new machines



Plus 2 Still minus?

DELIVERY dates for the new Amstrad machines seem to be receding, with apparent slippage on both the PC and the Spectrum Plus 2 Volume deliveries of the PC are now expected in early to mid October for the floppy disc version and mid to late October for the hard disc variant Major stockist Dixons is predicting mid October for the machines

Two weeks ago both W H Smith and Amstrad Distribution were claiming the Spectrum Plus 2 wouldn't arrive in the shops until mid October (see last week s issue) but Amstrad was last week insisting that the machines would be in the shops by last Saturday A spokeswoman could not however say which shops and in what numbers

W H Smith however, doesn t expect the machines in the warehouse until this Friday and they won't reach the shops until October 10

At the Plus 2 s launch at the beginning of September Amstrad said the machine was due in British high street stores later this month while around the same time it was said the PC range ' will go on sale later this month ' Asked about availability at the PC's launch Alan Sugar s reply was now

In real life however things don t seem to be so simple In early September Amstrad was predicting simultaneous launch dates for the floppy disc and hard disc versions of the PC, and as late as two weeks ago was claiming shipments would arrive at the end of last week But by last week this had changed to mid October

So what of Amstrad's proud boast that it doesn t launch products until they re ready to go on sale? A company spokeswoman claimed that Dixons demonstration models, which had been specially air-freighted to the UK, actually fulfilled the September promise ' A very small amount of machines are in circulation already so to that extent they (Amstrad) have kept their word

People who actually want to buy these machines are meanwhile being quoted waiting lists four to six weeks long



Cousens A bit hacked off

Activision acts on Hacker hack

ACTIVISION is currently planning a prosecution over pirated copies of *Hacker 2* The copies are thought to have turned up in a street market in Edinburgh and to have been traced back by Activision to what it thinks is the source

"It s true there have been pirated copies of *Hacker 2* in circulation," says Rod Cousens of Activision, "and they led us down a trail He won't identify the source because we re obviously suing but claims to be satisfied that the person or persons the company has identified are responsible for the piracy

It s not clear when the prosecution is due to come up as the matter is currently in the hands of Activision s solicitors, who are says Cousens, ' measuring the damage at the present time '

The company s attitude is a further sign of the software industry s increasing willingness to pursue the perpetrators of software piracy through the courts

Code Masters aims for high quality at budget prices

NEW software house Code Masters is the latest budget label to claim that its games, although only £1 99 are of full price quality Initial reports (see last week s review of *BMX Simulator*) indicate that these claims are, however, true and this is a little more out of the ordinary

The company is run by Richard and David Darling, who were responsible for *The Last V8 Master of Magic* and *Games Creator* and their father Jim Software is to be distributed through standard budget channels such as filling stations and newsagents and the company predicts that this market will increase to 60 per cent of the total games market (it's currently 40 per cent) by this time next year with Code Masters being the UK s number one soft ware house by then

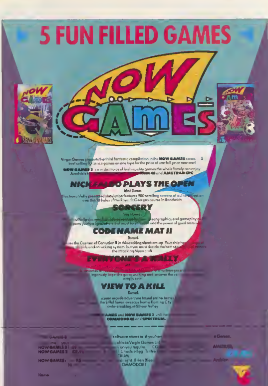
The prediction may look rash, but the company s range is to be distributed by Richard Bielby, generally held to be one of the secrets of Mastertronic's success, so it should do well

First releases are BMX Simulator and Red Max for the 64 Phantomas for the Spectrum and Terra-Cognita for Amstrad Spectrum and C16 The company is also releasing Games Creator on the same tape as three arcade games constructed with it (still at £1 99) and has a string of other titles to follow

Saga plans to launch dishy product

SAGA Products a division of the Saga business empire (which consists mainly of David White), is planning to beat Amstrad to the punch with a cheap satellite TV dish According to White the company plans to launch a range of dishes in kit form starting at £459 for a 90cm dish

White reckons a dish of this size will be adequate for the likes of the London area, but that larger versions might be needed in more remote areas The range should be launched sometime before Christmas



5 FUN FILLED GAMES
NOW GAMES
NICK FALDO PLAYS THE OPEN
Mind Games
This beautifully presented simulation features 900 scrolling screens of authentic action over the 18 holes of the Royal St Georges course in Sandwich
SORCERY
Virgin Games
CODE NAME MAT II
Domark
the attacking Myon craft
VIEW TO A KILL
Domark
the Eiffel Tower
code-breaking at Silicon Valley
COMMODORE and SPECTRUM.
able to Virgin Games Ltd

Improved ST database

TALENT Computer Systems has now released version 1 42 of its Trimbase database for the ST The new version has several improvements, including the ability to handle daisywheel as well as dot matrix printers, allowing a report to be sent to a file rather than printed directly, a facility to move from module to module without dropping into Desktop the widening of class names to include lower case letters and the removal of some of the security procedures

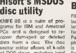
Details from Talent Computer Systems, Curran Building 101 St James Road, Glasgow G4 0NS Tel 041-552 2128

Automation in the home

RED BOX is a new system designed to facilitate home automation and is intended to provide an interface between the computer and the outside world for the people who aren t technically minded

The system plugs into a standard domestic wall socket and transmits the signals from box to box along the mains wire, so you don't have to install extra wiring The system is currently available for BBC Commodore 64 and Spectrum, with other micros to be added later The starter pack costs £129

Details from General Information Systems, Croxton Park, Cambridgeshire PE19 4SY



Details from HiSoft The Old School, Greenfield, Bedford MK45 5DE Tel 0525 718181

Details from First Software Intec 1 Wade Road, Basingstoke Hants RG24 0NE Tel 0256 463344



Hisoft's MSDOS disc utility

KNIFE 86 is a suite of programs for IBM and Amstrad PCs and is designed to recover damaged or deleted data from a disc The disc sector editor allows all kinds of DOS discs, including hard discs, to be examined and altered It can also read non-DOS discs, and includes a series of tools to recover data in a variety of circumstances It costs £29 95

Second First supplies Borland

FIRST Software is to distribute the entire range of Borland software including Reflex Turbo Prolog and Turbo Pascal in the UK But don t phone Pangbourne This First is the other one based in Basingstoke and the two are currently locked in mortal legal conflict Of Borland's range Reflex and Sidekick are also being supplied for the Amstrad PC by Amstrad itself

Gap plugs QL publishing

GAP Software has launched Front Page a £22 50 desktop publishing system for the QL It allows text to be printed in different sizes and fonts in columns if desired It will work with Epson compatible printers but drivers can also be customised for other types

Details from Gap Software, 17 St John s Terrace, London E7 8BX Tel 01 552 5452

You can also customise fonts, and use the program s simple drawing routines for illustrations

Diary Dates

OCTOBER

3–5 October
The Amstrad Computer Show
Novotel London
Details Home and business software and hardware for the Amstrad range
Price £3 adults £2 children £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

4 October
2nd Welsh Dragon Computer Show
Cardiff–Wales Airport
Details Software and hardware for the Dragon
Price £1 adults children and OAPs 50p
Organiser John Penn, 04203 5970

25 October
20th ZX Microfair
Central Hall Westminster London SW1
Details Sinclair machines hardware and software support
Price £1 50 adult £1 children for advance sales £2 and £1 on the door
Organiser Mike Johnston 01-801 9172

30–31 October
Hampshire Computer Fair
Guildhall Southampton
Details Business computers
Price Free entry by business registration
Organiser Testwood Exhibitions, 0703 31557

NOVEMBER

7–9 November
Electron and BBC Micro User Show
New Horticultural Hall Greycoat Street London SW1
Details Hardware, software and peripherals for the Electron BBC micro and Master series
Prices £3 adults £2 children £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

8 November
UKEUG National Einstein Show
National Motor Cycle Museum, Birmingham
Details Einstein software and hardware
Price Free
Organiser UKEUG 07982 2398

Prices dates and venues of shows can vary and you are therefore strongly advised to check with the show organiser before attending *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser

"GAMES AT THE SPEED OF LIGHT"...

LIGHTFORCE is for **VENGEANCE**.........
LIGHTFORCE is the Punishment Arm of [illegible] Command.
When a [illegible] system at the edge of the galaxy [illegible] in the form of a [illegible]
LIGHTFORCE [illegible]
LIGHTFORCE [illegible] and the [illegible] Belt.
LIGHTFORCE — at the speed of light [illegible] from **FTL**.

SHOCKWAY RIDERS are the [illegible] **ATHLETIC, AGGRESSIVE & ARROGANT** — as they [illegible] walkways that circle the great **MEGACITIES** [illegible] Century.
THE ULTIMATE AIM OF EVERY RIDER is to go **"FULL CIRCLE"** [illegible] the Block Boys, the [illegible] the Vigilantes — as well as [illegible] the Speed Traps and Rider Ramps [illegible]
SHOCKWAY RIDER is the [illegible] of the year — THE ULTIMATE FUTURE SHOCK!!



LIGHTFORCE AVAILABLE SEPT. '86
SHOCKWAY RIDER AVAILABLE OCT. '86

SPECTRUM £7.95
AMSTRAD & COMMODORE £9.95

FTL FASTER THAN LIGHT, CARTER FOLLIS GROUP OF COMPANIES,
[illegible] EAST, TIPTON, WEST MIDLANDS DY4 7UJ. Tel 021 [illegible] 2881 (4 lines)

Letters

Horrors!

A horror story to begin with all my back copies of your magazine have been destroyed by two children, who used them to stuff a punch-bag It still hurts me to talk about it

Help! After scouring through later issues of the magazine, I tried but couldn t find any mention of a back copies service for people in a similar predicament to myself

Therefore I'd be grateful if you could inform me of the details of such a service

P D Le Grys
Bristol

Happy to help. Back numbers of *Popular* are available from Annmarie O'Dwyer at 12–13 Little Newport Street, London WC2H 7PP, 01-437 4343, at 70 pence each.

Xen again

The functions in Simon Goodwin s XEN Program work well, but a few corrections are needed

1 The machine-code should be protected by a MEMORY command 10 MEMORY 40998
2 Decimal loaders are prone to errors and very difficult to check Please use HEX loaders on the AMSTRAD!
3 The article lists the scrolling commands DSCREEN, USCREEN etc The correct commands are DSCROLL USCROLL etc
4 The command ROMPEEK rom gives the same parameter for both ROMs Should this be Upper=0 Lower=1 ???

Paul Simpson might contact Technical Info Services, 76 Church Street, Larkhall, Lanarks (Tel 0698-884585) for servicing info Also worth a try are Bells Television Services, 190 Kings Road Harrogate N Yorks (Tel 0423-55885) and Mauntron, 8 Cherrytree Road Chinnor Oxon OX9 4QY (Large SASE) These provide info on TV/Video/VCR etc and may know from whence computer gen may be obtained However he should expect to pay anything from £2 to £30 for a service-sheet for a specific item depending on the age of the model

J M Dunnett, G4RGA
Wellington
Somerset

Atari associations

While working on the Atari User Group stand at the PCW show, we made contact with several user groups who expressed a desire to communicate with other Atari Groups

Can I ask all Atari groups and any general groups that have an Atari sub-group, to get in touch with us We are forming an Association of Atari Groups to promote an exchange of ideas and information, and to give us a stronger voice with the software and hardware manufacturers We are also hoping to organise an Atari convention in the future

Ken Ward
President
Norwich User Group
45 Coleburn Road
Lakenham
Norwich NR1 2NZ

Starting out

Recently I ventured for the first time ever into the field of computers with the purchase of a Psion Organiser II, but here my problems begin

Although I am very pleased with it, for all the tea in China I find the terminology and most of the manual itself beyond my comprehension

Can you therefore recommend any books for beginners on computers and terminology so that I can gain the maximum from my Psion Organiser?

Andrew Scott-Macintyre
London SW5

One very good book for beginners in computing generally is *Computer Wimp*, by John Bear.

For more specific information on the Organiser II, Psion, the manufacturer, can be contacted at Psion House, Harcourt Street, London W1H 1DT (01-723 9408).

Amplified Amstrads

I have had an Amstrad CPC464 for four months and I am very pleased with it

The sound out of the 464 s built-in speaker is okay but I would recommend that people buy an amplifier for it I have the Amstrad SSA-1 unit, a stereo amplifier and speech unit all in one, and the sound is very good indeed

Brian Cox
Crawley

Poking about

I have discovered a number of pokes which may be of interest to owners of the Spectrum 128 and Spectrum Plus 2

The first line number and step size used by the *Renumber* routine in 128K Basic are held as 2-byte numbers at 23444 and 23446 respectively

For example, to set the first line number to 1000 and the step size to 100, you would use *Poke 23444 232 Poke 23445 3 Poke 23446 100 Poke 23447 0*

David Hunter
Glasgow

GAC again...

I do not wish to turn the exchange between Richard Benson and Fergus McNeill (Letters September 11) into a free for all but I am afraid they are both slightly biased toward one utility or other – Richard to the *Graphic Adventure Creator*, and Fergus to *The Quill Illustrator* and *Patch*

Richard Benson in his reply to Fergus McNeill s original letter suggests that he com-

Puzzle

Puzzle No 227

I know a number with digits four
(Not one digit less nor one digit more)
That has a curious property
That s plain for all the world to see!

If you take in turn each digit there
And calculate the square of the square
And add together the total sum
The answer to the number itself will come
One number is sixteen thirty four
But can you tell me of any more
That plain for all the world to see,
Possess this curious property?
I m sure you ll agree my little verse
Could be very much better (and not much worse)
But you know the facts you have your mission
If you wish to enter this competition

Solution to Puzzle No 222

The maximum value is 16103 reached after eleven steps from a starting value of 800

The program takes each value in the range of 1 to 1000 in turn Lines 50 to 80 test each value for its integral factors Each factor found has its complementary factor found by dividing the number being tested by this value These factors are then added to the total (T) (lines 60 and 70) Note that in line 70 the complementary factor is *not* added if it should be the square of the number being tested This process is then repeated until a number is reached where no more factors are found (i e that number is a prime)

Each time a new maximum is achieved the values are printed out

Winner at Puzzle No 222

The winner this week is D C Mellett of Croydon Surrey who will be receiving £10

Rules

The closing date for Puzzle 227 is October 20
Answers on a postcard please

```
10 MAX=0
20 FOR N=1 TO 1000
[illegible]
40 T=?
[illegible] INT [illegible] T) [illegible]
[illegible] INT [illegible] THEN [illegible] T+F
[illegible] INT [illegible] THEN [illegible]
[illegible]
[illegible] AND T [illegible] THEN PRINT N,[illegible]
100 IF [illegible] THEN [illegible]
110 [illegible]
120 [illegible] GOTO 40
1[illegible] NEXT N
```

pared *GAC* with a standard *Quill* ie without *The Illustrator* and *Patch*, which would be totally wrong *GAC* generates a graphic adventure *The Quill* does not

Fergus stated that *GAC* is "an art utility with the 'adventure bit bolted on" which is a load of balderdash, and I was very surprised to read such a statement from such an experienced adventure author

GAC is a very powerful adventure writing utility short on memory maybe a bit stingy in location text granted, and no sound agreed – but it does have a decent parser and it also has a text compressor

"You use the joystick to buy and sell"

Fergus has got over the memory problem that besets both utilities by cutting his adventures into a number of parts so that he is in essence writing more than one adventure

In fact if my information is correct *The Colour of Magic* will be in four parts Doing the same on *GAC* would cure the memory problem

I have *The Quill* *Illustrator* and *Patch* and also tape of different fonts that can be loaded into *The Quill* (via *The Patch*) I also have *GAC*

Comparing the two, *The Quill* is easier to use The manuals are better set out – even a dunce could use it But *GAC* allows for more complicated conditions to be programmed in It has a far better parser, allowing multiple commands to be entered It has a larger store for the vocabulary and a few other advantages as well.

If I was to recommend one, I would go for *The Quill*, because of the ease of operation and the more flexible screen presentations After all most adventure players would like a well presented game

Paul G Crewe
Swindon

...and again

In response to Fergus McNeill s letter in *Popular*, 11 September about *GAC*, I would like to say how much I disagree with his comments I realise he was writing about *GAC* for the BBC micro, but surely it must still be better than *The Quill*

I own an Amstrad and *GAC* which I use all the time I also own *The Quill* and *Illustrator* packages, which I find very primitive when put up against *GAC* Here are just a few reasons why

1) *The Quill* has just 33 flags, although only flags 11 to 29 can be manipulated by the user

GAC has 255 markers which are either *Set* or *Reset* (0 or 255) and 127 counters which can store numbers These can be ordinary numbers or room numbers and noun verb or adverb numbers

For example instead of going east to room six, you could go east to room counter one (which could change its number value) Hence the room could change as well Very useful

2) *The Quill* has absolutely no text compression at all *GAC*, on the other hand has This can lead to larger games and better plots

3) *The Quill s* parser is standard *GAC s* can, to some extent be changed from within *GAC s* condition tables

For example, with *The Quill*, if you type *Get Food*, then providing the food is there, it will reply *OK* or *Tis Done* or a message defined by the user

GAC can do this and more By use of the condition tables you can make the game seem to be very clever indeed

Say that the food was a ham sandwich Typing *Get Food* could get a *GAC* response of *You are now carrying a ham sandwich* although you only told it to get some food

Also, there s no reloading because one load gives you *GAC* and the graphics section all in one package

Mark Farrell
Artful Intellect Software
Isle of Wight

The pawn game

Here are the latest moves in our chess competition – where it s you the readers against Colossus

In Game One, where *Popular* readers are playing Black, most of you have voted to continue straightforward development with the king's knight coming out

Colossus exhibiting enormous good sense, has opted for a mitching move

In Game Two where you're playing White, we have a little more action You have pushed your d-pawn and Colossus has removed it So, you re a pawn down What now?

The competition

The games are open to all readers of *Popular Computing Weekly* All you need is a computer with a chess program or just a chess board and pieces Enter the moves so far, and judge what you think is the best move for Black in game one, and white in game two

Send your moves on a postcard, to *Popular Chess* Unit 11, South Block The Maltings, Sawbridgeworth Herts CM21 9PG to arrive by October 8

The moves receiving the most votes will be entered into the games

At the end of the games, the reader making the most accepted moves will receive the prize of a reproduction Arran chess set

If you haven t taken part so far, don't worry The game will go on for many more moves so you still have an excellent chance of winning

Start working on the next move now

The games so far

Games one

1 Pe2-e4	Pe7-e5
2 Ng1-e3	Nb8-c6
3 Bf1-c4	Ng8-f6
4 Nf3-g5	?

Game two

1 Pe2-e4	Pe7-c5
2 Ng1-f3	Nb8-c6
3 Pd2 d4	Pc5xd4
4 ?	

A spoonful of Sugar

I agree entirely with your comment in News Desk (September 4) that Alan Sugar is "taking the business computer market by the scruff of the neck" But unlike you I don't think we need worry about whether the PC 1512 will meet the targets Amstrad has set

Remember how people said Alan s targets for the PCW 256 were ridiculous The PC1512 is going to make a bigger impact than any business computer since the launch of the IBM PC itself All those doubters who said that Alan Sugar could not do it again that the PC 1512 would just be yet another cheap clone and so on have already been proved wrong

This machine, its supplier s reputation and the tidal wave of software support that has already started mean that this computer will really put the cat amongst the fat pigeons of the computer industry

Within six months I foresee feathers everywhere IBM will follow its already announced policy of dropping out of the commodity PC market to concentrate on AT or better products, including its new PC2 with an 80286 and a 1 4MB $3\frac{1}{2}$ inch floppy drive the rest of the PC clone suppliers will just give up Users will, at last get the computer power they need at a price that is fair

With all respect to the great work done by the various Amstrad user groups, I think that the differences in software available and the kind of problems faced by the mainly business users of the PC 1512 make a separate and independent user group necessary and therefore I have founded the 1512 Independent User Group to cater for these members' needs

Paul Mullen
Chairman
1512 Independent User Group
47A London Road
Sevenoaks
Kent

The printer with a plot line

Conventional dot matrix or daisy-wheel printers usually suffer from a lack of graphics capabilities and limitations in areas such as print colour. One solution is to use a slower, but more versatile printer/plotter.

Devices like the Commodore 1520 printer/plotter gained a good deal of popularity without ever drawing any software support. Much more efficient than, say, the MPS-801 dot-matrix device at producing technical diagrams combined with text, the printer/plotter also offers multi colour printing, usually by having separate colour pens held in the print head.

The latest attempt to popularise the printer/plotter concept comes in the form of the Comx PL-80, manufactured by the developers of the Fantastick joystick reviewed below. Firmly aimed at the budget market with a price of £172, the PL-80 is a standard Centronics device, making it compatible with a wide range of home computers.

The PL 80 is very small (320 × 234 × 56mm) and weighs only 1.2Kg. Its all-plastic construction doesn't exactly make it robust, the paper cover particularly seems prone to breakage. However, the PL-80 obviously isn't designed for heavy-duty use.

The standard Centronics connector is at the rear, next to the socket for the 10V external power supply and on/off switch. To the left of the print roller is a recess for storing the four pens – red, blue, black and green – and at the front are the control switches.

The soft-touch switches allow you to scroll the paper up and down, move the print head left and right, select the pen colour and put the device on or off line. Apart from the rotating print head and paper release, that's it for mechanical features.

In operation, the PL-80 uses roll paper up to 214mm width, fed from arms mounted at the rear of the device, or cut sheets up to A4 size.

The maximum plotting speed is 92mm/second. Up to 80 characters can be printed per line, or 40 in enlarged mode, at 10cps. Normal character size is 2.4 × 2.4mm, in a Pica type face. Although the PL-80 would be in its element when used with PC packages such as AutoCAD, it's also straightforward to issue text and graphics commands straight from your micro. The PL-80 recognises ten text commands in the form of ASCII escape codes, and 14 graphics commands. Graphics mode is the default on power on; plotting takes place on a theoretical matrix of 960 × 65535 steps. In this mode, issuing graphics commands (either in ASCII or as text codes, for instance PRINT"H" or LPRINTCHR$(08) for 'home') makes the plotter draw directly. Multiple commands can be built up in this way to produce complex plots.

In text mode, superscript, subscript, enlarged characters, rotated characters and variable character and line spacing are all possible with a similar range of text commands.

To expand the performance of the PL-80 even further, it's possible to plug in ROM cartridges in a socket on the right hand side of the paper roller. These cartridges include alternative character sets, special symbols for French, German and other languages, and even a user-defined character ROM, although this last would require some skill to program.

Overall, the PL-80 seems an economic and versatile alternative to conventional flat-bed 'plotters', though its speed and distinctive typeface do not recommend it for uses such as conventional wordprocessing. For preparing business graphics, CAD applications, graphic design and many other uses, though, it offers a good deal of power without a high price-tag.

Chris Jenkins

Product *Comx PL 80 Printer/plotter* **Micro** Any with Centronics **Price** £172.44, ROMs £12.95, set of 4 pens £4.95, roll paper £1.50 **Supplier** Digital Delicatessen, Unit 28, Highbury Workshops, 22 Highbury Grove, London N5. Tel 01-359 2536

Handle this one with care

A joystick for all seasons? The Fantastick 2 seems to have almost everything the games enthusiast needs, together with smart styling and wide-ranging micro compatibility.

The stick has an elongated base, complete with four suckers, which makes it ideal for left or right-handed players. The pistol-style grip has a light action thumb trigger on top, while the base of the stick has an additional fire button mounted on either side.

There are two bonuses: a sliding auto-fire switch on the centre of the base and a mode selector hidden on the bottom. This changes the stick's operation from standard (Commodore, Atari, Amstrad, Sinclair – not Plus 2 – and so on), to MSX operation. It's never been clear to me why the MSX manufacturers decided to wire their joysticks in a non-standard way, but the Fantastick 2 overcomes the problem.

The one problem? Fantastick 2 operates using leaf switches, rather than the more expensive, but precise and reliable microswitches. It also has all plastic components rather than the more durable metal shaft, so treat it with care.

Chris Jenkins

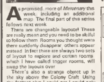
Product *Fantastick 2 joystick* **Micros** Commodore, Atari, Amstrad, Sinclair (not Plus 2), MSX **Price** £12.95 **Supplier** Digital Delicatessen, Unit 28, Highbury Workshops, 22 Highbury Grove, London N5. Tel 01-359 2536





Mercenaries and mazes in the second week

Tony Kendle continues the trek through the second city



As promised more of *Mercenary* this week including an additional map The final part of this series follows next week

There are changeable layouts! These are really mean and you need to be skilful to follow them Rooms you thought were there suddenly disappear others appear instead In fact there are always two sets of layout to explore and certain rooms which I have called trigger rooms, will swap the layouts over

There's also a strange object up in the sky above the Colony Craft Using the fastest ship I could get I could only reach 85 000 feet and the altitude was climbing so slowly that I couldn t reach it

An even faster ship flies along the middle across the city This is the Palyar Commander s brother-in-law s new ship In the original city you could take this using the kitchen sink and the speed was amazing (but if you left it, it flew away) Alas my attempts to take it in the second city have failed – perhaps someone has managed it?

The kitchen sink no longer enables you to pick up any object Using it in the first city you could even take the mysterious ship and pyramid that lie outside the city More importantly you could get the cobweb which turns out to be a skeleton key so you could throw away all individual keys

You can t get the cobweb in the second game, presumably to stop you getting into the triangular door to the cheat room What this does only Novogen knows

There are one or two devilish mazes in the game At first one appears to be a trap between a blue and a green room west of hanger 13 08 By dropping an object in each room I discovered it is a maze of eight rooms At the end of this is the pass needed to enter hanger 8 **

The second maze is a set of orange wall-less rooms that appear blank – a nasty challenge to get through it but you need a very important key at the end (although I actually used another route to it, more of which next week)

The gold appears to be missing In the brief instructions to the second city it states that the price of gold has risen a hundredfold My guess is that that is the height that has risen and that Novogen are giving a clue Perhaps it is in the unreachable object in the sky Perhaps it is at 100 000 feet off the altitude scale

Another major change is that the cheese cannot be used although it can be taken It s locked in a room which you can enter, but not exit

But get this, the cheese is actually two objects in this new game – it is also disguised as the table in the Palyar briefing room! Alas you need the anti-grav to take it, as it is too heavy' otherwise A lot of objects are now like this

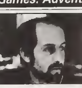
Charts

Top Twenty

1	(–)	Paperboy	Elite
2	(5)	Thrust	Firebird
3	(4)	Speed King	Mastertronic
4	(3)	Super Cycle	Epyx/US Gold
5	(6)	Ninja	Mastertronic
6	(8)	Dan Dare	Virgin
7	(12)	Kane	Mastertronic
8	(2)	Dragons Lair	Software Projects
9	(7)	Trivial Pursuit	Domark
10	(1)	Go for Gold	Americana
11	(10)	ACE	Cascade
12	(11)	Ninja Master	Firebird
13	(22)	Jack the Nipper	Gremlin Graphics
14	(9)	Ghosts and Goblins	Elite
15	(14)	Warhawk	Firebird
16	(17)	Green Beret	Imagine
17	(13)	Formula One Simulator	Mastertronic
18	(–)	Glider Rider	Quicksilva
19	(16)	Knight Rider	Gcean
20	(19)	Kick Start	Mastertronic

Figures compiled by Gallup/Microscape


DANTE'S
INFERNO
AN ANIMATED ARCADE
ADVENTURE FROM
HELL AND BEYOND
BEYOND



Adventures in trilogy lead to Cloud 9

Tony Bridge explains and reviews the stories and puzzles from the Middle Earth

Now that Level 9 has joined with Rainbird to bring us the Middle Earth trilogy in one package (albeit on three cassettes for those tape-based micros) it's probably a good time to offer some help to those people who may now be discovering these great adventures for the first time. Of course, there will also be plenty of players who will have been struggling with the three individual games for months.

The one that seems to get most people's vote as the most interesting and intriguing of the three is the last *Dungeon Adventure*.

The opening scenes of the story constitute an almost perfect start to an adventure: while the player will find it easy to explore several locations, nevertheless there are some puzzles which need to be solved before going on.

There is no way to proceed more than a couple of places to the west, as the field of poppies will send you into a fatal sleep – to the far east the game also ends. Although it may seem all too easy to enter the cave and forget the siren and the giants and the bird in the nest, you should really take the time to work out the puzzles associated with them. And with the Ram save and Oops facilities, where applicable, this chore shouldn't be too taxing.

Perhaps the first thing to do, in view of the taxing tasks ahead, is to register for rejuvenation. You can do this at the packing crate. If you enter you'll find yourself in an upside down room. *Take* or *Get* the chandelier and the room will right itself allowing you to reach the machine: press the button and thus ensure that you will be resurrected (not entirely without penalty) if you are careless enough to lose your life.

Now on to the stepping stones and the siren. The siren is easily dealt with if you drop or shake the poppy seed taken from the western side of the map, you'll be deafened by the loud explosion – and so, of course, is the siren if you drop it in the right place.

> *"All in all, another winner from Level 9; don't hesitate in buying it"*

The very next problem is the tree with six branches. Keep the mirror kindly left behind by the disappearing siren but throw everything else that you have collected (you should have the egg) at the tree which will find itself occupied in holding all the objects. At this juncture you will only have a few things to spare, so leave this problem for a while and venture east, where you will come across a couple of giants.

Climb the tree and drop the berry which will wake up the giants who then start fighting, leaving you to sneak away to the clearing to the north where you will find the belt dropped by one of them. This enables you to carry many more items if worn.

Now go south where you will find the thief: the mirror will protect you from him, and you can then collect a few things from the location. You should now have enough to fill all six of the tree's branches and thus allow you further north in order to attack the tree and fill in a bit more of the overall picture.

Not much more to do now! Travel south and east and then up the hill, where you will be able to play a little game of chance with the Rakshasa. You should have the weighted dice from the thief by now and so you should win the game in which case you will be the proud possessor of strong resurrection flames, allowing for long-distance regeneration.

This is just about all that there is to accomplish in this part of the adventure, which I call the "ante room" phase. Don't forget to pick up the driftwood and the crate before venturing into the cave to the north – and now your problems *really* start!

Although *Dungeon Adventure* is possibly the most interesting of the trilogy, the other two stories are equally worthy. Colossal suffers from familiarity, though the extra end-play is a great bonus and offers a glimmer of the well crafted adventure to be seen in *Adventure Quest*.

As I've said before, those who already have played the three will find an expanded text and the usual Level 9 graphics — puzzles and general storyline remain the same, although the player's score may be carried forward from game to game. All in all, another winner from Level 9: if you haven't seen them yet don't hesitate in buying the new collection.

A night at the space opera

John Cook enthuses about Starglider, the new epic from Rainbird

Starglider must be one of the most talked about and long awaited programs of the year. Those with long memories will remember rumour and talk of it at PCW 1985! Still ... the best things are worth waiting for eh and with the program being boxed and shipped out even as we speak, I can tell you that *Starglider* is simply the best arcade game I've seen on any 68000-based machine to date.

The Plot

Like all good yarns it has villains (the Ergons in general, Fleet Commander Hermann Kruud in particular) and heroes (such as Novenian good guy Jaysan). It has sneaky betrayals and insurmountable odds. In fact, the plot is straight out of Saturday morning pictures.

Evil Ergons have penetrated the orbiting defences of the kind, peace-loving Novenians by disguising their attack force as giant birds – Stargliders. This is because the Novenian equivalent of Greenpeace have insisted that the satellites be reprogrammed to recognise the shape of Stargliders, a kind of space faring albatross that migrates from planet to planet. But like most programs it contains a bug – it only checks the configuration of an object, not the composition or the size. So when Hermann, et al stroll in with Starglider-shaped ships and transporters – they take the ground defences by surprise and take over the world. Not so good.

You play the part of Jaysan (plus friend Katra), who are on the planet's moon when this catastrophe takes place – and must pilot Airborne Ground Attack Vehicle (AGAV) down to Novena and take out the enemy forces. Tricky.

So much for the story (there is a 64-page novella that comes with the package) but what about the program?



The Program

Starglider is graphically impressive, the pictures speak for themselves. The main display consists of colourful wire-frame graphics – but these are wire-frame graphics like you've never seen before, animated. The Stargliders flap gracefully, the Walkers stomp menacingly – quite an achievement when you consider there are 21 separate frames for the Walker alone. Surrounding this area is the AGAV console. This contains all your vital instruments (altimeter, air speed indicator, shield energy, fuel gauge, etc) plus a radar display of the immediate area, particularly useful for spotting incoming missiles. All this looks very pretty indeed.

What you can't glean from the screen shots is the quality of the sound, plenty of crash, bang, wallop, digitised voice messages and most surprising of all 15 seconds of sampled soundtrack every time you start the game. It'll never reach the top 20, but you can't help but be taken aback by the sound quality (recorded using a CX5 driving a DX21). But how does it play?



Gameplay

It plays amazingly well, via keyboard or mouse. Superficially similar to *Star Wars*, it has the same smooth fact action, but Rainbird has added an essential strategy element that'll keep the most hardened arcade addicts hooked for weeks.

High scores in the game require replenishing power cells, defence shields and ammunition supplies – how you exactly do that my only advice would be to read the manual and novella very closely indeed. The 16 different types of nasty are all too eager to shoot you up, although each has its particular foibles, of which you must learn to take advantage.

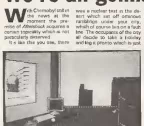
You have lasers, or maybe use your guided missiles (you literally steer them onto target with an 'on-the-nose' display). In short, it's great.

No doubt about it, Rainbird has succeeded in their aim of creating a supreme shoot 'em up which also requires some frontal lobe activity. It'll be out on Amiga and CBM 64 by Christmas, but right now, if you've got an ST, the only question is, what are you doing without it?

We're all gonna diiieee!

With Chernobyl still in the news at the moment the premise of *Aftershock* acquires a certain topicality which is not particularly deserved

It s like this you see, there was a nuclear test in the desert which set off ominous rumblings under your city, which of course lies on a fault line The occupants of the city all decide to take a holiday and leg it pronto which is just as well because a full scale earthquake follows



Not having any sense you of course are still sitting in your office (which survives the catastrophe remarkably well) by the time the fun is over, and someone with even less sense from the nuclear plant outside town radios in to say that the cooling system s buggered and if it s not fixed we re all gonna *diiieee!*

As the designer, the task falls to you to escape from the city get to the reactor and ho hum repair it before there s a bit of a bang

This is nearly a graphic adventure meaning that there s a fair chunk of descriptive test and some of the locations have illustrations (of a reasonable quality)

The parser claims to be more advanced than the normal verb-noun construction but as the vocabulary isn't particularly large it didn t appear so

So, even if the defuse the reactor' part of the plot is old hat, the rest of the game is more original and is quite interesting to play

Popular Appeal ♦ ♦ ♦

Duncan Evans

Program *Aftershock* **Micro** Amstrad CPC 464/664/6128 **Price** £9 99 cassette, £14 95 disc (other versions – Spectrum 48/128K £9 99, Amstrad 8256/8512 £17 95) **Supplier** Interceptor Micro s, Unit 3/8, Mercury House, Calleva Park Industrial Estate, Aldermaston, Berks

Aftermath designed after a classic

Alpha Omega CRL s budget label, could well pre-empt US Gold's launch of *Xevious* by releasing *Aftermath*

While the different attacking ships and enemies prove that this is no *Xevious* clone, then the vertically scrolling background of jungle and defence installations show from where the programmer drew much of his inspiration

In *Aftermath* then you must fight your way through ten different levels of swirling foes, none of which are graphically exciting, before facing the ultimate object of your mission, the enemy base Instead of a huge, moving death spitting, mothership this is represented as a house with four defence pods one to each corner A bit of a let down maybe, but then again this is a budget title

Shooting the enemy forces down, while a laudible activity, earns you no points at all, so every opportunity to bomb things must be taken to earn the bonus lives that are awarded after every 2000 points

The sound effects are somewhat sparse and the ground traffic is non-existent, but for the price this is an entertaining enough down graded version of an arcade classic

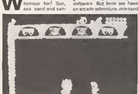
Popular Appeal ♦ ♦ ♦

Duncan Evans

Program *Aftermath* **Micro** C64 **Price** £1 99 **Supplier** Alpha Omega Software, CRL House, 9 King s Yard, Carpenters Road, London E15 2HD

Stick to sun, sea and sangria

What are the Spanish famous for? Sun, sea sand and sangria Certainly not computer software But here we have an arcade adventure released under the Melbourne House label programmed by a Spanish team Erbe Software called *Conquestador*



You can tell it s Swords and Sorcery time as there are lots of weird names – you are Redhan (strange, as your sprite is actually light blue), the action takes place within the citadel of Kulwoor and the major nasty is a giant fire dragon named Glaurung

The display is 2-D plan view and the design is generally good, as you move from screen to screen through the castle and the caverns below

Although all this is professionally done it looks just a little dated somehow and the gamesplay confirms this suspicion It s a strange cross between *Underwurlde* and *Joust*! A year maybe 18 months, ago, the world would have applauded this program, but in October 1986 you d have to be a firm fan of Spectrum arcade adventures to get a lot out of it

Popular Appeal ♦ ♦ ♦

John Cook

Program *Conquestador* **Type** Arcade adventure **Micro** Spectrum **Price** £7 95 **Supplier** Melbourne House 60 High Street, Hampton Wick, Kingston upon Thames, Surrey KT1 4DB.

The Napoleonic complex

Napoleon at War is CCS title for its latest computer wargame, a simulation of the battle of Eylau which makes you wonder what Napoleon must have been at in the company's previous releases *Waterloo* and *Austerlitz* Napoleon at lunch? Napoleon at the pictures?

Whatever, the latest title is a creditable attempt to get away from the 'ten hours a move' school of wargaming You play Napoleon, and your brief is to do severe damage to the Russian army facing you The screen follows the usual scrolling map format, but the play mechanism is a significant improvement

In most wargames units are moved turn by turn, one step at a time, but here you can select individual units or even corps (groups of two to three units), pick a target destination and they'll plod off towards it, over several moves if necessary The computer takes care of the Russians, the state of troops morale and fatigue and combat resolution so it's fairly simple to play

It's not so simple to win, however So far I've tried all-out attacks and various permutations of determined defence but haven't managed more than a marginal victory, and according to the instructions, the crowds of the time expected more than this from Napoleon The trick seems to be to combine good use of defensive positions with co-ordination of infantry and artillery

The game is written mainly in Basic but is still quite fast enough and overall seems well thought out Lots of entertainment for enthusiasts, and if you haven't tried wargames before it's playable enough to provide an easy introduction to the genre

Popular Appeal ♦ ♦ ♦

John Lettice

Program *Napoleon at War* **Micro** Spectrum **Price** £8 45 **Supplier** CCS, 14 Langton Way Blackheath, London SE3 7TL.

How to become a private detective

Borrowed Time has the sort of storyline that invariably brings out the James Cagney in reviewers So, stoutly ignoring that temptation, the premise of the game is that someone is trying to kill you Sam Harrow (groan) a 1930's private dick

Why? Well that's one of the objectives of the game as you try to stay alive long enough to find out who is behind the attempts on your life, gather enough evidence and then arrest the dirty rats

The game starts with you resting in your office but the peace is short lived, two thugs are on the way to rub you out You don't stand a chance in a straight fight so you must make a run for it The escape route is fairly apparent, it's merely a case of getting to grips with the parser and selecting the right words to get out in one piece Before departing your office it's something of a necessity to check your filing cabinet for dossiers on the most recent cases that you've tackled as a lot of the characters you'll meet later are there

Unlike most adventures you can move freely from location to location, although not knowing the correct password or some vital information will prevent you from doing anything useful there It soon becomes apparent that there is a very tangled web of double dealing and dirty deeds And all the while there's someone in the back ground closing in, waiting for the opportunity to blow you away

The graphics (as each location has an illustration) are good in places and poor in others – basically not a substantial improvement on those in the C64 version However, *Borrowed Time* has a nice line in humour and is recommended as a change of style from the normal type of adventure

Popular Appeal ♦ ♦ ♦

Duncan Evans

Program *Borrowed Time* **Micro** Atari ST **Price** £24 95 **Supplier** Activision, Pond Street, London NW3

Not a very funny joke

Map makers will love this latest release from Cascade – 200 odd rooms with mobile nasties locked doors keys and objects to locate

All you do is move around the complex, picking up ammunition and keys with the ultimate aim of storing seven fuel rods in the power room

The catch is that you can only carry three objects at a time, which makes the exercise rather like the old puzzle about rowing a wolf, a chicken and a sack of corn across the river

It can be done, but you need to remember where you've left the various keys And that map is essential

At £1 99 or even £2 99, Activator would be a worthwhile investment but at Cascade's prices it's a joke

Popular Appeal ♦ ♦

Peter Worlock

Program *Activator* **Micro** Amstrad CPCs **Price** £8 95 tape, £13 95 disc **Supplier** Cascade Games, Harrogate, N Yorkshire.

One more week in the competition

Just one more week to go in the *Popular Computing Weekly* competition! These are the last two science fiction movie stills in our series of eight. If you missed some of the others – don't worry.

We will be reprinting all of the photos again next week along with the entry form. So don't send in anything yet. We might drop a clue or two next week as well.

Remember, the prizes are well worth going for: five Spectrum Plus 2 computers for the top winners, then 10 Micronex printers, and 50 Magnum joysticks for the next 60 lucky entrants.

Good luck to all you sci fi buffs and others who enter!

From which movie did these lunatics escape?
Picture 7



On which movie set did these people shiver?
Picture 8



POPULAR Computing WEEKLY



MUSIC AND THE MICRO

INSIDE

Since our last music supplement a few months ago, we've been inundated by software, hardware and new musical instruments. It seems that a whole new set of buzzwords – MIDI, sampling, digital delay, sequencer, and so on – are being added to the vocabulary of the average computer owner. In this supplement you'll find some examples of how sound sampling, MIDI, digital drum machines and sound synthesis are getting cheaper and more accessible; for instance, the RAM Music Machine gives you all these facilities on the Spectrum for under £50. There's also plenty to read about for the BBC B, the Amstrad CPC, the CBM 64, and the up and coming music micro the Atari ST, which is being seen in more and more music studios ◀

Song of the Rainbird

RICHARD BENSON ON THE MOST SOPHISTICATED NON-MIDI MUSIC PROGRAM FOR THE AMSTRAD

Rainbird's Music System remains the most interesting non-MIDI music package for the Amstrad CPC machines. Including as it does a sophisticated window/icon/menu system, the Advanced Music System is remarkably user friendly while offering complex composition facilities, and sound synthesis limited only by the Amstrad's sound hardware.

The Advanced Music System is a disk based package which adds several facilities to the cassette based Music System. The main additions are a printout section which can produce quality music scores on a range of popular printers, and a linker which enables more sophisticated compositions to be built up from existing tunes.

After noting the screen colours to the values you require using F8 and F9, the best way to get to know the Advanced Music System is to enter the Editor/keyboard module, which is substantially the same as that of the Music System. Using CTRL, SPACE and ENTER, you can highlight different options in turn on the start menu, then enter the section you require. The AMS disk must be left in the drive in order to do this.

The Editor/keyboard module contains a number of "devices". Along the top is the command line, which includes the options FILES, VALUES, COMMANDS and INFO. The associated menus are pulled down using the function keys F1 to F7. The Voice Monitor Window displays the notes to be played, on a conventional music stave, while other devices include a metronome, a keyboard display and a sound control device. Only one device can be used at a time; the active device is highlighted.

As each pop up menu is selected it displays a highlight bar which allows you to select the value you wish to change, using the up and down arrow keys and ENTER. In the VALUES menu, for instance, the parameters include key



COMPUTEC
MUSIC UK - (0902) 405100
HARDWARE
Prophet 5 to MIDI interface £100 inc VAT
Chroma to MIDI interface £299 inc VAT
DX Voice Vault
Decillionix The Box
DX7 ROMs from Skyslip and Rittor
Shadow GTM6 guitar to MIDI
SOFTWARE
Steinberg Syntech Passport C Lab Joreth
Microvoz Treesoft DHCP Lemi MIDI soft
XRI Systems Icon Cheetah Roland Etc
Roland JX8P Editor for the Commodore
Prophet 2000 Editor for the Commodore
Overseas Customers Welcome
UK Send Cheque or PO for £1 Overseas send £2
International Money Order, for facts pack and price list
Refund on purchase
* The only music software specialists in the country *
24 HIGH ST., BROCKMOOR, BRIERLEY HILL,
WEST MIDLANDS DY5 3JA

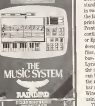
signature, time signature, tempo, resolution, accents, and so on

Composing music can be as simple or as complicated as you require. Notes can be played from the QWERTY keys, using the keyboard display as a guide, for 'real-time" recording. Alternatively, you can place notes directly on the music stave to produce complex tunes which are beyond your normal skill!

Before recording you must set a sound using the envelope menu. This gives a choice of seven preset sounds. You can also select the octave, tempo and timing before starting to record.

The barmeter cursor indicates your position in the tune, and having finished one track you can return to any point, record a second track with voice two, then finish with a third. Your composition can then be saved. Note that the length of the shortest note you can play is dictated by the resolution setting, which tidies up your music as you play it. For more advanced compositions, just change the resolution to a higher setting.

In step time, notes can be placed on the music stave using the arrow keys to select the pitch and F8 and F9 for duration. When you play back your masterpiece, whichever voices are switched on will be shown on the scrolling display, with barlines added automatically.



The Music System allows quite complex musical features such as ties, dynamics (to control volume) and accidentals, as well as rests, so it's as suitable for the music student as the casual user.

The synthesiser page provides seven resident sound settings ("envelopes"), with an alternative selection in sound set two. It's also possible to produce your own sounds, using attack, decay, sustain, noise level, volume/pitch, repeat, and so on. There are helpful COPY/SWAP options which allow you to use envelope parameters again without having to reproduce them part by part. Synthesiser parameters can be saved in the same way that tunes can be saved.

The Advanced Music System differs from the standard program in two main areas, the linker and the printer. The Printer uses continuous paper, and any Amstrad or Epson-compatible printer device. Up to six voices, from two music files, can be printed together on treble, bass or both staves, across the page. Lyrics can be entered and printed beneath the staves, taken from lyric files which can be saved and loaded separately from the music. The printer screen displays one bar at a time in the Voice Monitor Window, and you move to the next bar using SHIFT/ARROW.

The Linker screen consists of two windows, a file list on the left and a sequence display on the right. Quite simply, it enables you to display up to thirteen files of music, and arrange up to 99 of them, together with tempo and key signature, into long sequences. There's a fuel-guage type display which shows you how much memory space is left, and you can save the completed sequence with the suffix .LNK to indicate that it is a linker file. Linker files can of course be reloaded and edited at any stage, although you should note that loading a linker file destroys all music and linker information in the system at the time. The Advanced Music System remains the best music composer/editor for the Amstrad, with the omission of the MIDI sections found on the CBM version irrelevant for most users, who would probably be looking at something like EMR's MIDI software if they were interested in multi-track composition using external synths.

AMS's one peculiarity is that, as a window/icon/menu system, it should be controllable with a joystick, or, even better, a mouse. In fact you have to rely on a fairly illogical selection of control keys in conjunction with the screen pointer. Aside from that minor reservation, it's straightforward to use, powerful and well designed, everything the Amstrad musician needs to make the most of the CPC's sound capability ◀

Product: The Music System (cassette), Advanced Music System (disk)
Micro: Amstrad CPCs
Price: £14.95 (TMS) £19.95 (AMS)
Supplier: Rainbird, 01 240 8838

Sound on sound

SPECTRUM MIDI, SAMPLING, SYNTHESIS AND DIGITAL DRUMS UNDER £50? IMPOSSIBLE, SAYS CHRIS JENKINS HA, HA, SAYS RAM!

The Music Machine crams an enormous amount into one small, inexpensive package For Spectrum owners with a yen to enter the worlds of sound sampling, digital drum machines and MIDI control, it s the ideal way to dip a toe in the water without getting your fingers burnt, to coin a mixed metaphor

The list of facilities that Music Machine offers is quite staggering, it can sample sounds, up to eight at a time, and play them back, arrange them into patterns and songs, produce sophisticated three-voice drum patterns; control MIDI synthesisers and produce real time echo and reverb effects

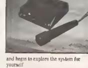
Flara

Designed by Sinclair offshoots Flare Technology, the Music Machine is RAM Electronics' first venture into music hardware Best known for the Turbo joystick interface, RAM has a good reputation for innovation and reliability and the Music Machine seems to be carrying on the tradition In fact, MM somewhat resembles the Turbo joystick interface plugging into the Spectrum's user port and including a safety guard which makes it impossible to attach or detach it while the power is plugged in

MM also features three MIDI sockets, IN, OUT and THROUGH, a phono line level socket for plugging the output into an amplifier and speaker, a mini jack output socket suitable for personal stereo headphones, and a mini jack input for the simple microphone supplied with the package On top is a volume slider Also in the package you'll find a stand for the mike, the software on cassette (with an audio demo on the reverse) and a clear 40 page manual

MM s software runs from a series of menus The master menu includes thirteen options, the title of the current tune in memory, the eight samples currently in memory, and the free memory space in milliseconds

There are two demos resident one is a drum pattern which demonstrates how three of the eight basic drum samples can be played at any time to create complex rhythms The other is a simple tune using two sampled voices, a piano-type sound and a synth bass After listening to the demo you can clear the resident sounds



and begin to explore the system for yourself

Each of the options on the main menu can be selected by pressing a single key, which is capitalised on the option It can be confusing to have to press, for instance, R for "sampleR", or O for "pianO", it might have been better to have the options listed by number on this page, although all the other pages are more straightforward

Listing the entire selection of facilities Music Machine has to offer would take forever, but I'll try to go through them in some sort of sensible order! Firstly, the sampling option This allows you to store a real sound, via the microphone, into the computer s memory A moving bar graph shows the sound level of the sound going in pressing T for Trigger once the level is correctly set makes the machine auto-trigger at the next sound it hears You can then press P to play the sound back, then exit to the Edit page to clean it up

Piano

Here the waveshape of the sound is displayed on a graph You can move two lines indicating the Front and Back of the sample using the cursor keys This saves memory space and allows you to cut off any unwanted clicks You can also reverse the sample for some interesting effects

At this stage you can go to the Piano section, and play the sample over a one octave range using the QWERTY keyboard If you're happy with it, you can assign it a sample number, 1-8, and a name.

The total memory space available for samples is equivalent to 1.1 seconds at 19.4KHz This is not amazingly good quality the Cheetah sampler, for instance, operates at 35KHz and gives consequently better samples However, the Music Machine's samples are quite acceptable, and the length is not that limiting – especially if you are most interested in percussive noises

Having assembled your samples, you can use the bar and tune editors to arrange them into songs

Two sampled voices can be played together to make up a tune The Bar Editor allows you to define a time signature as 8, 12 or 16 beats to the bar, and the tempo from 60 to 240 beats per minute Music is entered by using the space bar, cursors and keys S and F (for sharp and flat) and arranging notes on a fairly conventional music staff display Remember that since the output is two-voice, if you try to enter a third note on any one beat, the one you previously entered will disappear

Patterns

Each bar you define can be given a name (such as Intro or Chorus) before you move to the next bar

Having defined all the bars you need, moving to the Tune Editor page allows you to arrange them into complete compositions This is done simply by compiling a list of numbers representing the order in which the bars are to be played

On the left hand side of the Tune Editor page is the Drum Pattern editor As with the music side of the Music Machine software, the Drum sounds can be arranged into patterns You can tap out rhythms in real time using a cluster of keys in the centre of the keyboard, or assemble patterns on the Drum Editor screen, which is like the Tune Editor but offers eight drum voices, which can be arranged into patterns with a maximum of three voices playing at any one beat

These patterns are arranged into songs on the Tune Editor page

It would be lovely to think that the drum patterns and music patterns can then be played back together but no! In fact, you must select which of the two comes out of the audio socket when you select Play This selection is done on the MIDI page, which comes into its own if you have a MIDI synth

On the MIDI page, you can choose whether the drums or music are to play, define the MIDI channel (there are sixteen available on the MIDI standard) which controls the external synth, or receives note information from it; then quit to the Play page

Using an external MIDI synth, or sequencer, you can play two Music Machine voices at once (which you cannot do with the QWERTY keyboard) You could also MIDI two Music Machines together (if you have two Spectrums) or play drums on the Music Machine while playing two-voice music on the MIDI synth, and so on The possibilities are limited only by how much external equipment you have and how well you understand it. The Music Machine software cannot respond to MIDI velocity, pitch bend or modulation signals.

Music Machine's last facility is the echo unit This processes sounds input through the mike, adding an echo effect the delay time of which is displayed in milliseconds Deleting resident samples allows you to allocate more space to the echo unit

This quick review of the Music Machine's facilities should have given you some idea of how much it can do Combining the functions of sound sampler, digital drum machine and MIDI interface at only £49 95, it's an excellent introduction to electronic music techniques However, it's no more than that; none of the facilities provided are of really professional quality The sampling rate and storage available isn't good enough to satisfy the needs of serious musicians, the two-voice limitation of the Tune Editor is frustrating for the composer, the compositional abilities are not too sophisticated, and it's impossible to record tunes played on the MIDI keyboard in the computer's memory

Most of these drawbacks are overcome by Cheetah Marketing products – the **SpecDrum, Sound Sampler and MIDI Interface** which, however, would cost around £180 if bought separately There's plenty of space, then, for both manufacturers on the market The RAM Music Machine is ideal for completely amateur micro owners who don't want to spend a fortune to make a start in micro music, while the Cheetah products are better suited to more serious musicians who don't mind paying a little extra for more powerful, flexible software

It looks pretty certain though, that the Music Machine is going to be a big hit a great buy for the masses rather than the classes ◀

Product Music Machine
Micro: Spectrum, Spectrum 128, Spectrum+, Spectrum +2
Price £49 95
Supplier: RAM Electronics, Unit 16, Redfields Industrial Park, Redfield Lane, Church Crookham, Aldershot, Hampshire GU13 0RE. 0252 850031

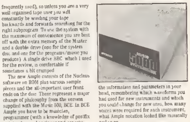
Hybrid's BBC remix

NOEL WILLIAMS ON USING THE NEW USER-FRIENDLY MUSIC 5000 VERSION OF HYBRID TECHNOLOGY'S DIGITAL SYNTHESISER FOR THE BBC MICRO

About a year ago Hybrid Technology released the Music 500 an add on digital synthesiser for the BBC micro Now there's the Music 5000 a cheaper but better package whose hardware is compatible with the Master range as well as the BBC B, complete with a manual and software on both ROM and disc/cassette The software and manual are available for existing Music 500 users as an upgrade

We previewed the Music 5000 in Vol 5 No 34, where we looked briefly at the AMPLE system and the user friendly 'front end' The Music 5000 uses a ROM version of the Advanced Music Processing Language and Environment called AMPLE Nucleus. There's no reason why you could not use a cassette system with the new Ample, in fact you would have more memory for your music but because the system is very large, it operates through a series of overlays (there are four that are frequently used), so unless you are a very well organised tape user you will constantly be winding your tape backwards and forwards searching for the right subprogram To use the system with the maximum of convenience you are best off with the extra memory of the Master and a double drive (one for the system disc and one for the programs/music you produce) A single drive BBC which I used for the review, is comfortable if sometimes a bit cramped

The new Ample consists of the Nucleus software on ROM plus various sample pieces and the all-important user front ends on the disc These represent a major change of philosophy from the version supplied with the Music 500, BCE. In BCE Ample you have to be musician, programmer (with a knowledge of postfix notation), sound engineer and acoustic physicist in order to make your music But most of all you need to be able to hold all



the information and parameters in your head, remembering which waveforms you had used for new instruments and which you could change for new ones, how many voices were required for each instrument, what Ample notation looked like musically and so on

That's all gone However, Chris Jordan of Hybrid assures me you can do anything

with the new Ample that you could with the old, though you might need the Programmer's Manual to do it. All that unfriendly programming has been replaced by user friendly interfaces to the software's facilities. You can now create pieces with no knowledge of programming and with only the smallest knowledge of Ample.

So how does it work? From the main menu and from function keys you select the Staff editor. This is one of the overlays, which you use to write your tunes. If you've seen Island Logic's 'Music System' you'll find the approach quite similar. You can only display one musical part at a time, both treble and bass clefs and can delete notes, copy notes, insert notes, raise them, lower them, lengthen them, shorten them - in brief do anything to a note that you might like to. Key signatures, accidentals, triples, slurs and chords can all be created through this editor. And you can play back what you've done instantly. It could hardly be simpler.

Mixing

So you build your tunes, one for each part in the piece, and save them with part names, such as 'part1', 'part2', 'part3', then go to the Notepad editor. This is a simple text editor allowing you to create Ample words with the minimum of fuss. Using this you set up a title word (which displays a message at the beginning of your piece) and a RUN word, which calls the parts you have defined, assigning them to players. So if you have four parts you have four players.

Now you must assign instruments to the parts (so that the players actually have something to play their parts on). This is the feature of the new system I like best. You call the Mix editor, giving you a Mode 7 representation of an eight track studio mixing console, complete with panpots and sliders. Using the editor you first assign voices to each of your players, a voice being equivalent to a track on the mixing deck. So a part with triads (three notes) will need three voices, a part to be played on an instrument which used four channels (ie four component sounds) needs two voices (each voice has a maximum of two channels) and so on.

Once voices are assigned you dabble with the console. It tells you which instruments are on which tracks and you can then adjust the volume and stereo position of each track, together with the tempo and tuning (base pitch) of the whole piece. When you have adjusted everything to your satisfaction you use one Ample word, MAKE, to turn this mix into a new word, and the piece is complete. It really is that easy.

You can alter mixer settings as the piece is actually playing, or create a whole new mix with the Mix Editor.

The system comes with fourteen preset instruments, ranging from a digital bass drum through an evocative panflute to bass organ and synthesisers. All of the preset sounds are good quality, attractive and have a lot of mileage in them. But when you want to design your own you can call up Notepad and type in new definitions. There are three levels of complexity you can choose - modifying an existing instrument, typing in one from the twenty five listed in the manual, or designing your own from scratch.

Modifying an existing instrument is the easiest. By placing a cursor on a preset instrument's parameter you can either change its value if it is a numeric variable, toggle it on and off if it's binary, or call up a menu of choices for that parameter which can be selected using the cursor. The three main menu driven choices you can make for each channel are between waveforms (there are fourteen on offer), between amplitude envelopes (there are seventeen) and between pitch envelopes (there are seventeen of these also). Some quick higher mathematics will tell you that this gives 4046 possible instruments even before you consider two channel instruments, or using offsets, ring modulation, frequency modulation, synchronisation and phase setting (which are all ways of varying the relationships between two channels of sound).

Three special effects add extra dimensions to the sounds, echo, with variable repeat and delay, autopan, which shifts the stereo position, and slide to create pitch bend, portamento and glissando effects.

The manual is very good, users have been thought about for a change, and everything for the novice is there. In particular not only is there enough information to make every task easy, there is sufficient to help you understand what you are doing. For example all the preset instrument definitions, waveforms and envelopes are listed, together with geometric and harmonic plots of the waveforms so you can see why given sounds have given qualities.

Nucleus' only serious flaw compared with the earlier BCE is in wave and envelope design. There isn't any. You cannot design your own waveforms or pitch or amplitude envelopes in the basic Nucleus system. I suspect the Programmer's Manual will tell us how, when it arrives. After all, it should only be a question of altering the contents of a given section of memory. But at the moment it can't be done, so if you are most interested in the nitty gritty of waveform tables and sound synthesis, rather than the business of making music, you might find BCE a better bet. However, the presets in Nucleus are better than anything I ever created from scratch in BCE, so I think there won't be many complaints.

Other minor problems are memory consumption - there's less room for programs in Nucleus than BCE. Hybrid say there are ways to save memory to be published in the Programmer's Guide. Adverts also claim hardware expandability but this is not in the basic package. Finally scores written in BCE can be transferred to Nucleus, but waveforms and instrument definitions cannot. You can't even load BCE programs into Nucleus, you have to *SPOOL a file from BCE and *EXEC it into Nucleus. None of these are major problems, especially if you are new to the 5000 and have a Master. Hybrid promise a keyboard by Christmas and I, for one, shall be in the queue to buy one ◀

A random sampler?

CHEETAH'S SPECTRUM SOUND SAMPLER MAKES UP IN QUALITY WHAT IT MAY LACK IN MUSICALITY. DAVID HUGHES TRIES IT OUT

Cheetah's long awaited Sound Sampler for the Spectrum is the natural successor to the incredibly successful SpecDrum (and AmDrum) digitally sampled drum machines. The sound sampling principle should now be familiar to most computer owners, since it crops up in many games as well as musical products.

Digitised

The Cheetah Sound Sampler is similar in operation to many other home micro and free standing samplers. It takes a real sound, input through a microphone, and processes it through analogue to-digital convertor. The resulting 'waveshape' is stored in the memory of the computer, and can be replayed through the digital-to-analogue convertor to reproduce the original sound. The fun starts when you begin to manipulate the original sound in the computer's memory, shifting the pitch to play different notes, editing it to obtain unreal effects and adding various echo and distortion effects.

The Sound Sampler plugs into the user port of the Spectrum, and comes complete with a simple microphone and stand. A lead terminating in a standard phono plug allows you to connect the sampler to your hi-fi.

The software — which can be transferred to microdrive if you wish — is arranged in a series of menus, similar to that of the RAM Music Machine reviewed elsewhere in this issue, but with if anything less graphic appeal.

The opening menu has five options, the first of which is to sample a sound. After selecting either a manual trigger operated by the spacebar, or automatic trigger, and entering the name of the sound you want to sample, you can record your sound. At full sampling speed the sample length is something under a second, twice as long on half sampling speed. If you are having trouble producing a distortion-free sample, there's an oscilloscope type display which can be used to eliminate any 'clipping', using the lefthand knob on the unit.

The most complex section of the sampling software is the Sample Configuration page. This allows you to display the waveform of the sample you have produced, setting the exact start, sustain loop and end points. This is done by positioning four numbered bars on the waveshape using the Z and X keys, plus, 1, 2, 3 and 4. If you make a bad edit you can retrieve the previous setup using the P key.

Should you wish to reconfigure an existing sample without losing the original, you can copy the original, if you have sufficient remaining memory space. Another useful function is Mix, by which two samples can be combined, though there is no way to un-combine them. You can also reverse samples, though you will probably have to reconfigure them.

The Playback section first asks you to enter which sound you wish to play. You can also opt to use the sustain feature, or not. Playback is over two octaves – the original sample is assigned to middle C – and is performed using the SHIFT key to access the higher octave. It's not easy to play convincingly on the QWERTY keyboard, but there are some helpful functions such as a "new note detect" which changes the pitch at the right time if you play a new note half-way through a sample.

Sounds can be saved to tape or microdrive, and there are several examples including smashing glass and musical notes on the B-side of the program tape. Using the 128K Spectrum, you can access another 64 K of memory which allows you to store extra samples in memory – though not, so far as I can see, to use longer samples.

The Sound Sampler's last function is real-time special effects. Echos, reverb effects, harmonising, distortion, sound chopping and indescribable ring modulation effects can be produced, with the level of the effect set by the volume level and feedback knobs on the hardware.

The sampling quality of the Cheetah Sound Sampler is pretty good, at full rate, 17·5kHz bandwidth (35kHz sample rate). In that sense it's much more acceptable to the serious musician than, say, the RAM Music Machine which doesn't produce samples good enough for serious recordings. However, the Cheetah software is poor visually and demands that the user types in file names correctly rather than use simple numbers, selects all sorts of options rather than using defaults, specifies file names rather than using file matching, and so on. It could certainly have done with more thought.

Composed

The major drawback, though, is the lack of compositional or MIDI control software. True, you can play tunes over two octaves, but few of us could produce Rick Wakeman like performances on a QWERTY keyboard, so it would have been nice to see sequencing software like the Music Machine's, or a MIDI interface facility for using a synth keyboard. As the manual says, it's N N-N N. Not bad, but there's plenty of room for improvement with subsequent developments ◀

Product. Sound Sampler
Micro: Spectrum
Price. £44 95
Supplier: Cheetah Marketing, 1 Willowbrook Science Park, Crickhowell Road, St. Mellons, Cardiff CF3 0EF, 0222-777337

The Syndromic beat

AN ADVANCE LOOK AT SOME ATARI ST MIDI SEQUENCING, VDICE PROGRAMMING AND SAMPLING PRODUCTS, BY RICHARD BENSDN

Most of the advanced music software available for home computers is coming from the US, and up until now much of it has been unobtainable in this country. Fortunately, companies like Syndromic Music are changing the situation, starting by bringing in Atari ST and Commodore 64 programs. Also on the way is a range of hardware products which should cause a stir in even the most advanced studios. Syndromic Music's plans include a range of impressive developments from Hybrid Arts (not to be confused with the UK's Hybrid Technology, responsible for the Music 5000 digital synthesiser for the BBC B).

FX-Track

EZ-Track for the Atari ST is a twenty-track polyphonic MIDI recorder, similar in some ways to the MoPro MIDI package which we have looked at in the past. It's a real time recorder featuring a "tape machine" display with record, play, and stop "buttons", a visual metronome with an optional audio click, fully programmable tempo, MIDI through facility, and the ability to copy, mix and time-correct MIDI recordings. EZ-Track has a MIDI mode display which allows you to select MIDI channels (1-16, mono, poly and omni), then enable or disable the start/stop facility and the internal clock. There's also a safety feature which allows you to prevent the accidental deletion of files.

The song display allows you to enter memos (for instance, 'patch changes optimised for CZ-101' appears on the demo disc), and shows the percentage of memory used up by each pattern. There's a compatible EZ Score music printing package coming; prices are £59 and £89 respectively.

EZ Track looks like a good option for users looking for a real-time recorder rather than a sophisticated sequencer. We'll review it in more depth at a later date.

CZ-Droid is a Casio synthesiser patch librarian/graphic editor/patch loader/intelligent sound creator. There's also a version available for the Yamaha DX7. If you have struggled to produce new sounds on the Yamaha and Casio synths, trying to understand algorithms, operators, eight stage envelopes, waveshapes and feedback modulation with the help of the tiny LCD displays on the synths themselves, you will appreciate the ease of editing sounds with the help of a full graphic display. CZ Droid includes 36 working memories for patch information, and a full display of all the oscillator, waveshape, amplifier and keyboard parameters which can be incremented or decremented using the mouse buttons. Any MIDI channel can be used to play the synth sounds, and the incredible Droid function will take a basic sound which you have set up and produce distortions and permutations of it, based around a set of algorithms designed to give usable musical sounds. Envelopes can be copied and swapped to speed things up even more, and if you don't like the results you can just return to the orignal patch or initialise the memory. All patch parameters can also be printed out.



CZ-Droid is £89, DX-Droid is a more blanchworthy £249.

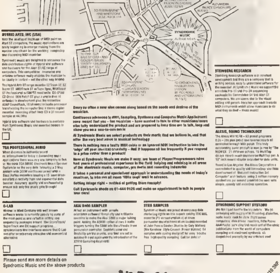
Other Hybrid Arts products in the works include Genpatch, a MIDI patch storage system which works with a wide range of synths, and MidiTrack ST. This advanced sequencer program is suitable for the most sophisticated studio setups, and is available with a tape sync option at £349, or with SMPTE, the European standard for synchronising video signals with audio tracks, for £539. It's also possible to upgrade from Miditrack ST to ST Pro for £225. Forthcoming is a scorewriter compatible with Miditrack, and there are also cut-down versions for the Atari eight bit computers.

On the hardware side, Hybrid Arts' ADAP-1 Soundtrack, a compact disc quality sampler, is on the way at around £2500. This 19 inch studio rack mounting unit provides stereo sampling at 44kHz, giving a 20 second monophonic sample which can be played via MIDI. 64 multi-samples can be stored simultaneously for more realistic effects, and real-time digital delay, reverb and so on can also be generated. The software for the ST includes a waveshape display with full cut, copy and paste, mixing, looping and waveform drawing. ADAP can talk to other MIDI-standard digital samplers, and includes a real-time oscilloscope function for sound analysis. One for the real professionals, it competes favourably on sound quality with £8-10,000 studio units, and probably outdoes them on facilities and ease of use.

Syndromic

The great virtue of Syndromic Music as software distributors is that they are ready, willing and able to demonstrate any set up, explaining the fine points and making sure that the hardware/software combination you buy is tailored to your exact needs. We'll be reviewing the products in more detail as finished versions become available. In the meantime, to make an appointment to visit the Syndromic studio, contact Syndromic Music, 24-26 Avenue Mews, London N10 3NP, tel 01-444 9126 ◀

PUTTING SYNDROMIC MUSIC ON THE MAP



Please send me more details on
Syndromic Music and the above products

Name

Address

Postcode

SYNDROMIC MUSIC

'Creative music for creative people'
SYNDROMIC MUSIC,
24/26 Avenue Mews, London N10 3NP
Telephone 01-444-9126

Born in the U.S.A.

MARK JENKINS REPORTS ON THE VAST SELECTION OF MUSIC SOFTWARE PRODUCTS HEADING ACROSS THE ATLANTIC

Although it has lost ground to the Atari 520ST in the last few months, the vast music market in the States has ensured a good future for the C64, with packages often being developed in parallel for the Commodore, Atari, IBM and Apple micros Unfortunately most of this software never makes it over to the UK (one exception is the Hybrid Arts range which is now beginning to filter in via Syndromic Music), but it may be worth giving a roundup of US music packages, since most of the companies mentioned will be happy to send further information, will probably take orders, and will quite likely be flattered by interest from outside their home country

PASSPORT do have a UK outlet - RITTOR MUSIC - but their connection is via the Japanese rather than the American division The company's MIDI Interface has tape synchronisation and DIN sync for older non-MIDI drum machines and sequencers, and allows you to run Master Tracks, a "phrase-oriented" multi-track sequencer You can create and save phrases, lines, sequences and whole songs using three main windows the Pattern Window, the Song Window, and the Edit Window

Synthesisers

It's also possible to edit and store sounds for many popular synthesisers using Passport Library software - on the C64 and 128 you can edit the Yamaha TX816, DX7 and TX7, the Casio CZ synths (still the best value for money MIDI keyboards), the Korg DW 8000, the Roland Juno-106 and JX 8P, and the upmarket Oberheim OB 8 and Xpander The Passport editors are compatible with DX Pro, DX-Heaven Data 7 and other editors.

Passport Designs Inc, 625 Miramontes Street, Half Moon Bay, California, USA 94019 Tel 0101 415 726 0280

Rittor Music, 24 Broomgrove Gardens, Edgware, Middx Tel 01-952 5302

On the subject of the DX7, VALHALA Software has two disk libraries, DTO and DTR, with 757 sounds, the DTR version coping with one-step instant loading of up to ten banks of sounds Both versions work on the C64 and C128 and prices are $79 95 and $99 95 respectively, you can send for a DX7 demo tape or DTO/DTR demo disk for $10 00

Valhala Music Inc, Box 20157, Ferndale, MI 48220 USA Tel. 0101 313 548 9360

SONUS are an unknown quantity as far as we're concerned, but their Super Sequencer 128 for the C128 looks like a winner It's claimed to use the machine's entire memory and offers 16 sequences, 16 tracks, library facilities, Sequence and Track edit, Song Mode, punch in and channel send control Super Sequencer 64 is also available, as are a DX TX Librarian, MIDI Processor Editing package, DX21, DX27 and DX100 editors (getting closer to the budget end of things) and RX11, RX15 and RX21 drum machine program filing systems

Sonus, 21430 Strathern Street, Suite H, Canoga Park, California 91304 Tel. 0101 818 702 0992

Send a $7 cash or money order to Key Clique and they ll send you a demo cassette featuring their DX7 programs loaded from ROM cartridges It's also possible to obtain the sounds as C64 or Atari files using a loading program called Sys Ex, again, send $7 for a demo

Key Clique Inc, 866B West Union Avenue, Montebello, California 90640 Tel 0101 213 725 6946

TRIANGLE AUDIO have some very unusual C64 products, including a Data Analyser, an Arpeggiator, a Split Point Processor as well as more conventional DX7 and Casio CZ library packages. The Data Analyser will record MIDI messages and display them in English while the Arpeggiator creates patterns based on chords played in real time The Split Point Processor allows you to direct notes to either of two channels depending on the position of a keyboard split point set by the user Passport, Sequential or JMS interfaces will work and a demo disk of all software is available for $5 00 More information from the address below

Passport s products set music software standards

Triangle Audio Inc, PO Box 1108, Sterling, Virginia, 22170

PRESENCE are working with the Casio CZ synths and offer Patchmaster 100 (on tape) and Patchmaster 200 (on disk) for $59 95 The disk version is for use with the Dr T or CZ Rider library systems (see below) and offers more sounds, effects and percussive patches A demo tape costs just $3

Presence Sound Productions, 228 Bleeker Street, New York, New York 10014

And lastly Dr T, who offer a keyboard Controlled Sequencer for the C64/128, an Algorithmic Composition Package (whatever that is!), DX and CZ Patch libraries, Echo Plus, which allows one keyboard to control up to four others for splitting, harmonizing, echo, single finger chord playing and other functions

Dr. T's Music Software, 66 Louise Road, Chestnut Hill, MA 02167, USA Tel 0101 617 244 6954.

That's just a taste of the Commodore software now available in the US, and that country remains a burgeoning source of music software for much more obscure micros too (how about a MIDI composer for the Tandy Colour Computer?) We'd advise you to send for full information before sending any money to these companies, and remember if you're telephoning that they will be between five and eight hours behind us - you won't get very good service if you wake anyone up at three in the morning! ◀

Scoring with the 64

AT LAST, A POWERFUL MUSIC PRINTING PACKAGE WITH MIDI FOR THE CBM 64 RICHARD BENSON ENTERS THE MUSIC SHOP

There are now many MIDI-compatible software packages available for the CBM 64, performing a wide range of control functions. Most are pure sequencers, operating in real time or step-time, while some are sound editing packages, or library programs, specific to one type of synthesiser. Up until now though, there has not been a music printing system which can produce adequate manuscripts without expensive extras.

Like the Apple Polywriter, a very sophisticated music transcribing, editing and printing package for the IIe, IIc and II+ models, The 64 **Music Shop** is a Passport Software product distributed here by Rittor Music. Although The Music Shop doesn't have all the facilities of Polywriter, it shows the same standard of attention to detail.

The Music Shop is a step-time MIDI music transcription program. It takes information entered either from the QWERTY keyboard, or from a MIDI synth's keyboard via an interface, and produces eight-voice scores which can be edited, stored and printed out. Note that only the Passport MIDI interface is suitable for use with this program; at £109.95 for the standard interface, or £149.95 with tape sync facility, this may sound expensive, but it is a very well established product in the States and may well be a good investment (since as we'll see, more Passport products are on the way).

The Music Shop can be used with a joystick or the keyboard, and is designed to print with the MPS 801, Vic 1525 or any interface/printer set up which fully emulates the 1525. Once your synths, computer and printer are all set up, try loading the program, selecting the FILE menu, loading a demo file and selecting the PLAY icon. You'll be treated to an eight voice rendition of any one of ten tunes, including the 1812 Overture, played on your synth, plus a display of the music score on the main screen.

The standard display is in five main sections: the music staff, a function icon, the TOOLS menu, the EDIT menu and the page number. The joystick controls an arrow on the screen, while the fire button opens menus or places notes on the stave.

Opening the TOOLS menu and selecting the GET NOTES option brings up a menu of the available notes, time signatures, bar markings and rests. Pick up the note you want to work with and return to the main screen by pointing at the exit box or pressing run/stop. You can then either place notes on the stave by playing the synth keyboard (using the MIDI ON feature, with the synth set to MIDI channel 1), or you can use the joystick to position notes on the screen. To save time, you can change the note length and rest using the QWERTY keyboard once you are familiar with the options available and don't have to return to the note menu continuously. Erasing mistakes is easy, just point at the offending note, then press the joystick button or press E. As you come to the end of each page, the program will automatically move to the next page. Bar lines have to be inserted manually, but the Verify Timing function can pull them into line if you have made any timing errors.

As your score is playing back, you can alter the MIDI setup options to produce the synth sounds you want. You can use up to four synths at a time, defining a MIDI channel for each (with a total, remember, of eight voices playing at a time). The MIDI Setup window also allows you to define the overall tempo of the piece and the synchronisation speed for non MIDI drum machines.

It's also possible to save a GROUP NUMBER file which contains information for MIDI patch changes. In this way, when you load a piece of music it's also possible to load the particular voices which you want the synths to play, making it unnecessary to set each one to bass, melody, harmony and lead voices, for instance.

Having defined the musical parts you want, it's easy to produce a whole score using the CUT/COPY/CLEAR/PASTE options from the EDIT menu. This allows you to create a box around the relevant section, and either cut it out and place it elsewhere, copy it to another bar page, or erase it. There are three staff modes available, quartet, grand staff and single staff. Using quartet mode, you can create a maximum of 96 pages. Of course, if you need more it's easy to create separate "movements" under different file names.

The Music Shop contains many other features which make it ideal for the experienced musician wanting to produce clearn manuscripts. The quality of the print out produced is excellent considering the limitations of the Commodore printers, and so long as you don't make the mistake of thinking that The Music Shop is a full-blown MIDI sequencer it's good value at $80.

Rittor Music will be distributing more Passport products in the future including what looks like a very impressive studio-quality sequencer package for the 64. Master Tracks (also available for Apple and IBM machines) includes a 16-track real time sequencer with punch in/out, fast forward/rewind, MIDI through, autocorrect up to 32nd note triplets, a wide range of MIDI, tape and other sync facilities, full performance control recording, step time editing of pitch, duration, velocity, articulation and tempo, cut and paste, MIDI delay, 999 step song creation using 256 patterns, visual scrolling song mode and numerous other functions. At £199.95 it's obviously for more advanced users (don't forget the price of the Passport interface as well!), but Master Tracks may well offer the most powerful sequencing facilities available on the CBM 64 when it becomes available in a few weeks' time. In the meantime, The Music Shop shows that MIDI software isn't just for keyboard bashing micro users, but has something to offer to the musically literate tool.

For more details of Passport sequencer software, voice librarians, music transcription packages and other software for the CBM 64, Apple, IBM and other machines, as well as a selection of Yamaha DX ROMs, MIDI interfaces and other micro music products, contact Rittor Music at 24 Broomgrove Gardens, Edgware, Middlesex, HA8 5SJ, 01-952 5302 ◀

Wandering about Minstrel

MARK JENKINS EXPANDS ON KUMA'S LOW-PRICED ST COMPDSER PACKAGE WHICH INTRODUCES THE PRINCIPLES OF MIDI

We looked at K Minstrel in the Soundcheck column a couple of weeks ago, but for those of you who missed it, here's an update on this useful Atari 520/1040ST based music package

K-Minstrel is well clued up on the major advantages of the Atari machines – a reasonable sound chip, built-in MIDI for control of professional synthesisers, and great operating speed, efficiency and memory capacity. Three channels of composition and playback are on offer on the computer alone, together with 4, 8, 12 or 16 channels of playback via MIDI If you do want to take up the MIDI option, the Casio CZ-101 synth remains the best bet – four different monophonic sounds simultaneously via MIDI, or eight-note chords, all for £250 or so

If the K Minstrel package is replaying four channels of sound it can store 3200 chords, which is enough for a very lengthy composition You can program slurs triplets, accelerandos and crescendos (changes in speed and volume) as part of the piece, so music can sound quite impressive even if it's confined to the three very basic sound channels of the computer – K-Minstrel only offers very simple editing of the built in sounds

The package consists of a single disc and a slim booklet which describes the system as a "musical display editor' The basic display is a double musical stave, and the pull down options are Desk, Music (Play, New, Load, Save, Quit), Sequence (Play, Start, End, Copy, Delete, Move, Merge and Save), Chord (Play, Delete, Insert, Mark), Select (Channel, Volume, Tempo, Tempo No. Attack, Decay, Sustain), and Options (Change Key, Change Name, Transpose, Metronome, Print Pages)

The Atari computers offer three levels of resolution – low, medium and high – and K-Minstrel operates in medium resolution in colour, or hi-res in mono The display is very clear and at the bottom of the screen there's a choice of note and rest lengths and a tempo select function. Notes of the desired length are inserted into a piece using the Atari's mouse

You don't have to be an expert to compose at first – there's a good selection of demo pieces which will show you how far the package can go, and you can begin by editing them to see the effects of certain changes Each channel is colour coded and you simply select which channel number you wish to edit before beginning

The demo pieces include a bit of Handel, The Entertainer, Land Of Hope And Glory and many pieces in a good selection of other styles. The Select page gives a limited amount of control over the computer sounds used, altering volume, Attack, Decay and Sustain, and you can enter either single notes or whole chords

The length of composition available depends on the number of channels used, but obviously it will be more than one page long The page number reached is indicated as the composition plays back, but the music display itself doesn't actually scroll or change over You can load a sequence from disc and insert it after a section you've already completed, copy and merge patterns, enter a title for the finished composition using Change Name, select a new key signature with Transpose, and produce a metronome click if desired.

If you want to print out your composition an Epson-compatible dot matrix printer will do the job, although you'll have to mark in changes of tempo and a lot of other musical terms yourself Inserting fast triplet notes in place of existing pairs of notes does come out on paper though

So K Minstrel has MIDI? Not according to the manual, which has nothing to say about the subject What probably happens in practice is that each composed channel is automatically transmitted over the MIDI channel of the same number, from 1–16. If you're using just one synthesiser, set it to Omni Mode so that it plays all channels with the same sound, unless you're using a Casio CZ synth, SCI Six-Trax or similar, in which case you can set it to Mono Mode and get a different monophonic sound for every channel If you want to write chords, you simply set two or more synth channels to the same sound

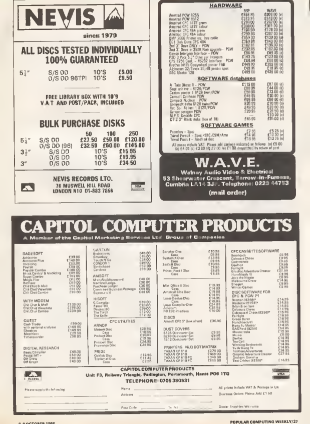
K-Minstrel is a useful compositional system for basic work, although it won't teach you to compose as such (there are few of the helpful auto compositional elements found on Ariolasoft's Music Master for the Commodore 64 and Amiga)

It's reasonably powerful in terms of compositional complexity, very basic on MIDI (no MIDI assignment page to call up the correct sounds as on Activision's Music Studio), but overall, provides good value for money for the existing Atari user who'd like to see whether his interest in music justifies moving on to a more professional and more expensive package.

K-Minstrel is £29 95 and more information is available from Jon Day at Kuma Computers Ltd, 12 Horseshoe Park, Pangbourne, Berks, tel 07357 4335 ◀



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Soccer

by Mark Slater

With the football season having recently commenced here is your chance to make sure your favourite team gets what it deserves. The program will run on both the BBC and Electron.

The listing will appear over three weeks so if you don't want to do the typing send £2 to Mark Slater at 54 Leverhouse Lane, Leyland, Lancashire PR5 2XN for a copy on cassette.

The main menu offers four options, Instructions, Choose Team, Start Game and End Program. Once you have chosen your team, the default is Acorn City, and selected Start Game the first screen will be displayed.

This shows the players in your team, their skill rating, whether they have been selected and their strength rating. At the bottom of the screen is a panel comparing the relative scores for the attack, midfield and defence of your team with those of the opposition that week.

Every time a player is in a match he loses one point of strength while resting gains him four points. Tired players contribute very little to the team in this game.

Next week, more instructions and part two of the listing.

```
>
  10ONERROR:PROCerror
  140PROCmachine_code
  150name$="Acorn City"
  160DIM team$(11),data(11,6),order(11,1
),check(12),league$(47),result$(6)
  170DIMsquad$(16),skill(16),stren(16),s
tat$(16),player(11),com(50)
  180division=4
  190VDU23,255,0,255,0,255,0,0,0,0
  200ln2$=STRING$(40,CHR$(255))
  210*FX9,50
  220PROCteams
  230REPEAT
  240MODE5:VDU23;8202;0;0;0;
  250PROCtitle_page
  270REM******* ENTER CHOICE ********
  290key$=GET$
  300IFVAL(key$)<1 OR VAL(key$)>4 THEN 2
90
  310IFkey$="1"THENMODE4:PROCinstruction
s
  320IFkey$="2"THENMODE4:VDU19,0,1;0;:PR
OCchoose_team
  330IFkey$="4"THENCALL&D01
  340UNTILkey$="3"
  360REM******* MAIN PROGRAM ********
  380MODE4:VDU23;8202;0;0;0;
  390REPEAT
  400PROCsquad
  410PROCdivision_teams
  420team=0
  430match=-1
  440REPEAT
  450VDU19,0,1;0;
  460COLOUR129:COLOUR0:CLS
  470PRINTTAB(10,1);"*******************
*"
  480PRINTTAB(10,2);"* ELECTRON SUCCER
*"
  490PRINTTAB(10,3);"*******************
*"
  500PRINTTAB(11,5);"Name        Skill  S
tr"
  510tb=2
  520tot=0
  530FORI=1TO16
  540k=0
  550IFI>9THENtb=1
  560PRINTTAB(tb,I+6);I;")"
  570PRINTTAB(5,I+6);squad$(I)
  580k=0:FORj=1TO11: IF player(j)=I THEN
k=1
  590NEXT:IFk=1THENPROCon
  600PRINTTAB(24,I+6);skill(I);
  610PRINTTAB(30,I+6);stren(I);
  620IFstren(I)<10 THENPRINT" "
  630PROCoff
  640NEXT
  650VDU28,16,26,38,24
  660PROCon:CLS
  670PRINTTAB(1,0);"Opponents"
  680match=match+1
  690IF match=team THEN 680
  700tb=(11-LEN(team$(match)))/2
  710PRINTTAB(tb,2);team$(match);
  720opdef=RND(7)+3
  730opmid=RND(7)+3
  740opatt=RND(7)+3
  750PRINTTAB(14,0);"Def: ";opdef
  760PRINTTAB(14,1);"Mid: ";opmid
  770PRINTTAB(14,2);"Att: ";opatt;:VDU26
  780 PROCoff
  790deff=0:midd=0:attt=0
  800FORI=1TO11
  810IFplayer(I)<6 THEN deff=deff+(skill
(player(I))*stren(player(I)))
  820IFplayer(I)>5 AND player(I)<12 THEN
 midd=midd+(skill(player(I))*stren(playe
r(I)))
  830IFplayer(I)>11 THEN attt=attt+(skil
l(player(I))*stren(player(I)))
  840NEXT
  850di=10
  860deff=INT(deff/di):midd=INT(midd/di)
:attt=INT(attt/di)
  870IFdeff>10THENdeff=10
  880IFmidd>10THENmidd=10
  890IFattt>10THENattt=10
  900PRINTTAB(2,24);"Defence   :";deff;"
"
  910PRINTTAB(2,25);"Mid field:";midd;"
"
  920PRINTTAB(2,26);"Attack    :";attt;"
"
  930PROCon
  940FORI=1TO11:PRINTTAB(7,player(I)+6);
"*":NEXT
  950PROCoff
  960PRINTTAB(0,28);ln2$
  970PRINTTAB(3,30);"'";:PROCon:PRINT"C"
;:PROCoff:PRINT"' to change team or '";:
PROCon:PRINT"P";:PROCoff:PRINT"' to play
"
  980ky$=INKEY$(0)
  990IF ky$<>"P" AND ky$<>"C" THEN 980
 1000IF ky$="C" THEN PROCchange:GOTO 790
 1010FORloop=1TO12:check(loop)=-9:NEXTlo
op
 1020FORI=1TO11
 1030stren(player(I))=stren(player(I))-5
 1040NEXT
 1050FORk=1TO16:stren(k)=stren(k)+4
 1060IFstren(k)>10 THEN stren(k)=10
 1070IFstren(k)<1 THEN stren(k)=1
 1080NEXT
 1090 CLS
 1100VDU19,0,2;0;
 1110PRINTTAB(11,2);"MATCH IN PROGRESS"
 1120
 1130REM****** WORK-OUT SCORE *******
 1150score1=INT(RND(attt-(opdef/2)+((mid
d-(opmid/2))/2))+1)
 1160score1=INT(score1*(2/3))
 1170score2=INT(RND(opatt-(deff/2)+((opm
id-(midd/2))/2))+1)
 1180score2=INT(score2*(2/3))
 1190IF score1<1 THEN score1=0
 1200IF score2<1 THEN score2=0
 1210IF score1>4 THEN score1=4
 1220IF score2>4 THEN score2=4
 1230PROCcommentary
 1240REM
 1250REM****** PRINT OUT SCORE ******
 1260REM
 1270PRINTTAB(1,10);"The other results a
re:"
 1290REM* WORK-OUT & PRINT NEW TABLE *
 1300
 1310PROCalter
 1320PROCsort
 1330PROCspace
```

Programming: BBC

```
1340VDU19,0,1;0;
1350PROCdraw
1360PROCdivision
1370PROCspace
1390REM** RETURN FOR NEXT MATCH OR **
1400REM** END OF SEASON ************
1410
1420UNTILmatch=11
1430PROCend_of_season
1440FORloop=0TO11:FORloop2=0TO6:data(lo
op,loop2)=0:NEXT:NEXT
1450UNTIL0
1470REM**** SET UP TEAM ARRAY ****
1480
1490DEFPROCteams
1500FORcount1=0TO47
1510READleague$(count1)
1520NEXTcount1
1530DATA"Arsenal","Aston V.","Chelsea",
"Coventry","Everton","Ipswich","Leiceste
r","Liverpool","Man Utd","Q.P.R.","Watfo
rd","West Brom"
1540DATA"Barnsley","Birmingham","Blackb
urn","Fulham","Grimsby","Leeds","Man Cit
y","Oxford Utd","Portsmouth","Shrewsbury
","Wimbledon","Wolves"
1550DATA"Bradford","Brentford","Bolton"
,"Charlton","Doncaster","Gillingham","Hu
ll City","Orient","P.N.E.","Rotherham","
Swansea","Wigan Ath"
1560DATA"Aldershot","Crewe","Exeter","H
alifax","Hereford","Mansfield","Rochdale
","Scunthorpe","Swindon","Torquay","Tran
mere","Wrexham"
1570ENDPROC
1590REM**** Teams for division ****
1600
1610DEFPROCdivision_teams
1620FORcount=0TO11
1630team$(count)=league$(count+((divisi
on-1)*12))
1640NEXTcount
1650team$(0)=name$
1660ENDPROC
1700DEFPROCon
1710COLOUR128:COLOUR1
1720ENDPROC
1760DEFPROCoff
```

Programming: Amstrad 464

Road Toad

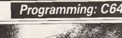
by Graham Tyson



At last, the final instalment of the Road Toad trilogy. Once you've typed it all in, save it then run it and correct the errors. Once the listing is completely error free instructions for saving the machine code file will appear. And then you can finally play the game using either the keyboard or joystick.

```
361 DATA F0,F0,F0,F0,F0,E0,F0,F0,F0,F0,F
0,E0,F0,F0,F0,E0,90,80,D0,F0,F0, 4800
362 DATA F0,F0,F0,F0,F0,F0,F0,F0,60,A0,F
0,F0,F0,70,E0,A0,50,F0,00,D0,F0, 4368
363 DATA B0,50,F0,50,F0,F0,F0,F0,F0,50,F
0,70,90,F0,F0,60,F0,70,90,70,F0, 3856
364 DATA F0,F0,F0,F0,70,F0,D0,F0,E0,F0,B
0,70,D0,F0,F0,F0,30,F0,F0,F0,F0, 4448
365 DATA F0,F0,F0,F0,F0,F0,F0,F0,F0,70,F
0,F0,D0,E0,F0,B0,F0,30,30,D0,C0, 4336
366 DATA C0,C0,30,40,CD,00,BB,CD,4E,BB,C
D,BA,BB,CD,FF,BB,CD,65,BC,CD,A7, 3449
367 DATA BC,CD,C8,BC,CD,37,BD,11,B2,DA,E
D,53,B0,8A,11,00,00,CD,53,88,40, 2606
368 DATA ED,53,03,40,ED,53,05,40,ED,53,0
6,40,01,00,04,C5,79,01,00,00,CD, 1695
369 DATA 32,BC,C1,0C,10,F4,01,00,00,CD,3
8,BC,3E,01,CD,90,BB,21,0F,13,CD, 2024
370 DATA 75,BB,06,0C,21,EA,89,7E,CD,5A,B
B,23,10,F9,21,0F,0B,CD,75,BB,06, 2208
371 DATA 06,21,E4,89,7E,CD,5A,BB,23,10,F
9,21,05,0D,CD,75,BB,06,10,21,D4, 2139
372 DATA 89,7E,CD,5A,BB,23,10,F9,11,96,0
0,21,2C,01,CD,C0,BB,11,00,00,21, 1924
373 DATA 30,00,CD,F9,BB,11,54,01,21,00,0
0,CD,F9,BB,11,00,00,21,C8,FF,CD, 2183
374 DATA F9,BB,11,AC,FE,21,00,00,CD,F9,B
B,18,22,52,20,4F,20,41,20,44,20, 2033
375 DATA 20,54,20,4F,20,41,20,44,A4,20,3
1,39,28,36,47,52,41,48,41,4D,20, 1300
376 DATA 54,59,53,4F,4E,01,00,00,CD,38,B
C,3E,00,01,00,00,CD,32,BC,3E,01, 1432
377 DATA 01,15,15,CD,32,BC,3E,02,01,0A,0
A,CD,32,BC,3E,03,01,0A,DA,CD,32, 1355
378 DATA BC,CD,68,8A,3E,2F,CD,1E,BB,28,F
6,CD,09,BB,38,FB,11,B2,8A,ED,53, 2813
379 DATA B0,8A,3E,01,CD,0E,BC,3E,03,01,0
2,02,CD,32,BC,3E,02,01,03,03,CD, 1573
380 DATA 32,BC,3E,01,01,15,15,CD,32,BC,3
E,00,01,0D,0D,CD,32,BC,01,0D,0D, 1346
381 DATA CD,38,BC,CD,00,40,3E,01,CD,0E,B
C,C3,55,89,CD,19,BD,CD,9A,8A,ED, 2758
382 DATA 5B,B0,8A,21,2F,C7,06,08,C5,1A,F
E,FF,20,09,11,B2,8A,ED,53,B0,8A, 2430
383 DATA 18,F2,77,13,01,00,08,09,C1,10,E
8,2A,B0,8A,01,08,00,09,22,B0,8A, 1585
384 DATA C8,21,E1,C6,06,08,C5,E5,D1,1B,0
1,4F,00,ED,B0,01,B1,07,09,C1,10, 2229
385 DATA F0,C9,00,00,10,30,30,30,30,30,1
0,00,C0,C0,C0,CD,C0,C0,F0,00,30, 2153
386 DATA 30,30,30,30,30,F0,00,90,C0,C0,C
0,C0,C0,80,00,10,30,30,30,00,30, 1904
387 DATA 10,00,F0,C0,C0,F0,00,C0,F0,00,F
0,30,00,F0,30,30,F0,00,80,CD,00, 2496
388 DATA C0,C0,C0,80,00,10,30,30,30,30,3
0,10,00,F0,C0,C0,F0,C0,C0,F0,00, 2464
389 DATA F0,30,00,C0,00,30,F0,00,80,C0,0
0,00,00,C0,80,00,00,00,00,00,00, 1408
390 DATA 00,00,00,00,00,00,00,00,00,00,0
0,00,00,00,00,00,00,00,00,00,00, 0
391 DATA 00,00,00,00,00,00,10,30,30,30,3
0,30,10,80,F0,C0,C0,C0,C0,C0,F0, 1712
392 DATA 00,F0,30,00,00,00,30,F0,00,80,C
0,00,00,00,C0,80,00,10,30,30,30, 1376
393 DATA 30,30,10,00,CD,C0,C0,C0,C0,C0,F
0,00,30,30,30,30,30,30,F0,00,80, 2160
394 DATA 20,C0,C0,CD,C0,80,00,10,30,30,3
0,30,30,10,00,F0,C0,C0,F0,C0,C0, 2608
395 DATA C0,00,F0,30,30,F0,70,30,10,00,8
0,C0,C0,80,80,C0,C0,00,10,30,30, 2208
396 DATA 30,00,30,10,00,F0,C0,C0,F0,00,C
0,F0,00,F0,30,00,F0,30,30,F0,00, 2272
397 DATA 80,C0,00,CD,C0,C0,80,00,10,30,3
0,30,30,30,10,00,F0,C0,CD,C0,C0, 2304
398 DATA CD,F0,00,F0,30,30,30,30,30,F0,0
0,80,C0,C0,C0,C0,C0,80,00,10,30, 2432
399 DATA 30,30,30,30,10,00,F0,C0,C0,F0,C
0,C0,C0,00,F0,30,30,F0,70,30,10, 2400
```

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400 DATA 00,80,C0,C0,30,80,C0,C0,00,00,00,00,00,00,00,00,00,00,00,00,00, 1152
401 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,10, 16
402 DATA 30,30,30,30,30,10,00,C0,C0,C0,F0,C0,C0,C0,00,30,30,F0,E0,F0,30, 2496
403 DATA 30,00,C0,C0,00,00,00,C0,C0,00,10,30,30,30,30,30,10,00,F0,C0,C0, 1968
404 DATA F0,C0,C0,F0,00,F0,30,00,C0,00,30,F0,00,80,C0,80,00,00,C0,80,00, 2272
405 DATA 10,30,30,10,00,00,00,00,C0,C0,C0,F0,30,30,F0,00,30,30,30,F0,C0, 1856
406 DATA C0,F0,00,80,C0,C0,80,00,00,00,00,10,30,30,30,00,30,10,00,F0,C0, 1728
407 DATA C0,F0,00,C0,F0,00,F0,30,00,F0,30,30,F0,00,80,C0,00,C0,C0,C0,80, 2752
408 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
409 DATA 00,00,00,00,00,00,00,00,00,00,00,00,10,30,30,30,30,30,10,00,F0, 512
410 DATA C0,C0,C0,C0,C0,F0,00,F0,30,30,30,30,30,F0,00,80,C0,C0,C0,C0,C0, 3008
411 DATA 80,00,10,30,30,30,30,30,10,00,F0,C0,C0,F0,C0,C0,C0,00,F0,30,30, 2176
412 DATA F0,70,30,10,00,80,C0,C0,30,80,C0,C0,00,00,00,00,00,00,00,00,01, 1568
413 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
414 DATA 00,00,00,00,00,00,00,30,30,10,00,00,00,00,00,C0,C0,F0,00,F0,30, 1024
415 DATA 30,30,30,30,F0,00,80,C0,C0,C0,C0,70,80,00,10,30,30,30,30,30,10, 1920
416 DATA 80,F0,C0,C0,C0,C0,C0,F0,00,F0,30,30,30,30,30,F0,00,80,C0,C0,C0, 2864
417 DATA C0,C0,80,00,10,30,30,10,00,00,00,00,C0,C0,C0,F0,30,30,F0,00,30, 1840
418 DATA 30,30,F0,C0,C0,F0,00,30,C0,C0,80,00,00,00,00,10,30,30,30,00,30, 1808
419 DATA 10,00,F0,C0,C0,F0,00,C0,F0,00,F0,30,00,F0,30,30,F0,00,80,C0,00, 2496
420 DATA C0,C0,C0,80,00,10,30,00,00,00,00,00,00,F0,E0,30,30,30,30,70,00, 1408
421 DATA F0,D0,C0,C0,C0,C0,E0,00,80,C0,00,00,00,00,00,00,30,00,00,00,00, 1808
422 DATA 00,30,00,F0,30,30,30,30,30,F0,00,F0,C0,C0,C0,C0,C0,F0,00,F0,00, 2400
423 DATA 00,00,00,00,C0,00,10,30,30,30,30,30,10,00,F0,C0,C0,C0,C0,C0,F0, 1904
424 DATA 00,F0,30,00,00,00,30,F0,00,80,C0,00,00,00,C0,80,00,10,30,30,30, 1376
425 DATA 30,30,10,00,C0,C0,C0,F0,C0,C0,C0,00,30,30,F0,E0,F0,30,30,00,C0, 2592
426 DATA C0,80,00,80,C0,C0,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 832
427 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,10,30,00, 64
428 DATA 00,00,00,00,00,F0,80,30,30,30,30,70,00,F0,D0,C0,C0,C0,C0,E0,00, 2160
429 DATA 80,C0,00,00,00,00,00,00,10,30,30,30,30,30,10,00,F0,C0,C0,C0,C0, 1600
430 DATA C0,F0,00,F0,30,30,30,30,30,F0,00,80,C0,C0,C0,C0,C0,80,00,00,00, 2368
431 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
432 DATA 00,00,00,00,00,00,00,00,00,10,30,30,30,30,30,10,00,F0,C0,C0,F0, 1136
433 DATA C0,C0,C0,00,F0,30,30,F0,00,00,00,00,80,C0,C0,80,00,00,00,00,10, 1808
434 DATA 30,30,30,30,30,10,00,C0,C0,C0,C0,C0,C0,F0,00,00,00,00,00,00,30, 1696
435 DATA F0,00,00,80,00,00,00,C0,80,00,10,30,30,30,30,30,10,00,F0,C0,C0, 1456
436 DATA C0,F0,C0,C0,00,F0,30,30,30,F0,30,30,00,80,C0,C0,C0,C0,C0,80,00, 2752
437 DATA 10,30,30,10,00,00,00,00,C0,C0,C0,F0,30,30,F0,00,30,30,30,F0,C0, 1856
438 DATA C0,F0,00,80,C0,C0,80,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 1072
439 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
440 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
441 DATA 00,00,00,00,00,00,30,30,30,30,00,00,00,00,C0,C0,C0,C0,00,00,00, 960
442 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
443 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
444 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,01,03,03,03,03,03,01,00, 17
445 DATA 0F,0C,0C,0F,0C,0C,0C,00,0F,03,03,0F,00,00,00,00,08,0C,0C,0E,00, 166
446 DATA 00,00,00,01,03,03,03,03,03,01,00,0F,0C,0C,0F,0C,0C,0C,0C,0F,03, 125
447 DATA 03,0F,07,03,01,00,08,0C,0C,08,00,0C,0C,00,01,03,03,03,03,03,01, 118
448 DATA 00,0F,0C,0C,0F,0C,0C,0F,00,0F,03,00,0C,0C,03,0F,00,08,0C,00,00, 161
449 DATA 00,0C,0C,00,01,03,03,03,00,03,01,00,0F,0C,0C,0F,00,0C,0F,03,0F, 130
450 DATA 00,00,0F,03,03,0F,00,08,0C,00,0C,0C,0C,08,00,01,03,03,03,00,03, 116
451 DATA 01,00,0F,0C,0C,0F,00,0C,0F,00,0F,03,03,0F,03,03,0F,00,08,0C,00, 156
452 DATA 0C,0C,0C,08,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 44
453 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,01,03,03,03,00, 13
454 DATA 0C,01,00,0F,0C,0C,0F,0C,0C,0F,00,0F,03,00,0F,03,03,0F,00,08,0C, 59
455 DATA 00,0C,0C,0C,08,00,01,03,03,03,03,03,01,00,0F,0C,0C,0F,0C,0F,0C, [illegible]
456 DATA 00,0F,03,03,0F,00,0F,00,03,08,0C,0C,08,00,03,00,00,01,03,03,03, 96
457 DATA 03,03,03,00,0F,0C,0C,0C,0F,0C,0C,00,0F,03,03,03,0F,03,03,00,08, 150
458 DATA 0C,0C,0C,0C,0C,08,00,01,03,03,03,03,03,01,00,0F,0C,0C,0F,0C,0C, 160
459 DATA 0F,00,0F,03,00,00,0C,03,0F,00,08,0C,00,00,00,0C,08,00,01,03,03, 98
460 DATA 03,03,03,01,00,0F,0C,0C,0F,0C,0C,0F,00,0F,03,00,03,03,0F,00, 151
461 DATA 0E,07,00,00,00,0C,08,00,00,00,00,01,00,00,03,00,00,00,00,0F,00, 43
462 DATA 0C,00,00,00,00,00,00,0C,00,00,00,00,00,01,00,00,00,00,00,01,03, 4
463 DATA 0C,00,00,00,00,00,0F,0B,03,03,03,03,07,0E,0F,0D,0C,0C,0C,0C,0E, 135
464 DATA 00,08,0C,00,00,00,00,00,00,01,03,03,03,03,03,01,00,0F,0C,0C,0C, 98
465 DATA 0C,0C,0F,00,0F,03,03,03,03,03,0F,00,08,0C,0C,0C,0C,0C,08,00,00, 160
466 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
467 DATA 00,00,00,00,00,00,00,00,00,00,01,03,03,03,00,03,01,00,0F,0C,0C, 53
468 DATA 0F,00,0C,0F,00,0F,03,00,0F,03,03,0F,00,08,0C,00,0C,0C,0C,08,00, 160
469 DATA 01,03,00,00,00,00,00,00,0F,0B,03,03,03,03,07,10,0F,0D,0C,0C,0C, 113
470 DATA 0C,0E,00,08,0C,00,00,00,00,00,00,01,03,03,03,03,03,01,00,0F,0C, 98
471 DATA 0C,0C,0F,0C,0C,00,0F,03,03,03,0F,03,03,00,08,0C,0C,0C,0C,0C,08, 184
472 DATA 00,01,03,03,03,03,03,01,00,0F,0C,0C,0F,0C,0C,0C,00,0F,03,03,0F, 143
473 DATA 07,03,01,00,08,0C,0C,08,00,0C,0C,00,01,03,00,00,00,00,00,00,0F, 102
474 DATA 08,03,03,03,03,07,00,0F,0D,0C,0C,0C,0C,0E,00,08,0C,00,00,00,00, 140
475 DATA 0C,0C,00,00,00,00,00,00,00,0C,00,00,00,00,00,00,00,00,00,00,00, 0
476 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
477 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,03,03,03, 9
478 DATA 03,00,00,00,00,0C,0C,0C,0C,00,00,00,00,00,00,00,00,00,00,00,00, 51
479 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
480 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, 0
481 DATA 00,00,00,00,FF
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Minz

by Ken Smith

Part two of Minz follows. When the program is finally entered it should be saved before running and checking for errors.

This original game involves avoiding the hidden mines. The catch is that the mines appear only for a moment, then disappear so you have to remember the location to avoid being blown up.

If you would like a copy on cassette send £2 to 73 Wakefield Street, East Ham, London E6 1NR.



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[illegible]
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Yes, this is your chance to get rich and famous. Well, famous anyway, as *Popular Computing Weekly* is looking for contributions to the Programming pages.

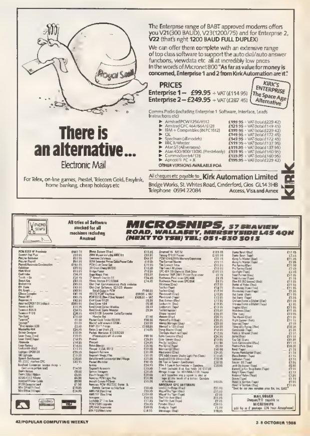
What sort of thing are we looking for? You name it – anything original from games to utilities, applications and the like, written in Basic, machine code or anything else you can think of.

Programs for any computer will be considered not just the old faithfuls (Spectrum, Amstrad, QL, Commodore, etc), so send those listings in. What we need is a working copy of the program on tape or disc plus an accompanying article or documentation that you would anticipate going with the piece, normally not over 2000 words.

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With Kenn Garroch

Speculations

Mike Downs, of Loughborough, writes

Q I'm thinking of buying an Amstrad PC1512. Could you tell me the specifications and whether it is a good buy for business and games use?

A The Amstrad PC1512 was recently released at the *PCW* show and last week's *Popular* carried a full review, which gives the specifications but to sum up

There is one basic model which can be upgraded This is a system with single disc drive black and white monitor, 512K Ram, mouse Basic 2, Gem, *Gem Paint*, DOS Plus, and MS DOS 3 2 Its processor is an 8086 running at 8Mhz and the keyboard is a proper one (unlike previous Amstrad models) It costs £456 95 (inc Vat) and is expandable An extra disc drive will cost £100 (ex Vat) the colour monitor and card £150 (ex Vat), £300 (ex Vat) for a 10Mbyte hard disc drive, and £400 (ex Vat) for a 20Mbyte hard disc

As to whether it is worth buying, IBM has more or less scooped the business market with the PC so the amount of business software available for PCs and PC clones is vast, if somewhat expensive (Amstrad has done some deals with various software houses for cheaper products such as *Wordstar* and *Supercalc* so things are looking up)

The games market in this country has not yet geared itself up to producing software for the PCs since in the past they have been too expensive to be regarded as home machines But considering the price of the 1512, this will probably change since it may well become a home machine

The Amstrad PC1512 is a good buy whichever way you look at it for business use For games use, its not a terribly good machine but then neither were the CPC6128 or the BBC If it sells enough the games software houses will be foolish to ignore it so if you get one it will be possible to import games from the States if someone isn't already doing it, and wait for some goodies to appear

Games mapping

P Wridley of Stratford Upon Avon Warwickshire writes

Q I am writing a computer game on the Commodore 64 but have run into problems about where to put the high res bitmap screen in memory I would also like to know how the sprites are set up once the bitmap is in place

A Screen memory positioning on the C64 is controlled by two memory addresses, 56576 and 53272 The first refers to port A or C1A2 which is used to select which of four banks of memory the VICII chip is to access the second refers to VIC register 24 which controls where in the bank the screen and character set are placed

The two lowest bits of 56576 select one of four banks of memory 0–$3FFF, $4000–$7FFF $8000–$BFFF, or $C000–$FFFF (0–16363 16364–32767 32768–49151, or 49152–65535 in decimal) In fact, these two bits are inverted so that three refers to bank zero, two to bank one one to bank two and zero to bank three Within a bank the screen start address is controlled by the high nibble (high four bits) or 53272, and the character definitions address by the low nibble (low four bits) in the following way

Address	53272	56576
Bit7	VM13	x
Bit6	VM12	x
Bit5	VM11	x
Bit4	VM10	x
Bit3	CB13	x
Bit2	CB12	x
Bit1	CB11	B1
Bit0	1	B0

To get the 16 bit address of the screen start, set the above bits out in the following way

```
Screen=B1 B0 VM13 VM12 VM11 VM10 0 0 0 0 0 0 0 0 0 0
```

and for the character definitions

```
Chars=B1 B0 CB13 CB12 CB11 0 0 0 0 0 0 0 0 0 0 0
```

On power up 53272 contains 21 (0001 0101 in binary) and bits B0 and B1 are both 1 (but inverted when used to get the address) so the address of the screen is

```
0000 0100 0000 0000=$0400 or 1024
```

and the address of the character set is

```
0001 0000 0000 0000=$1000 or 4096
```

Bitmapping sets the memory out in a slightly different way The screen start address now points to the colour memory for the bitmap and the character base address points to the bitmap itself

The sprite pointers start 16 bytes above the end of the colour map and each one can hold a number between zero and 255 pointing to a 64 byte sprite definition So if sprite pointer zero holds three, the sprite definition is 64 bytes starting at 192 bytes above the start of the bank

As an example using bank one (starts at 16384) bits zero and one in 56576 contain zero and one respectively, ie *Poke 56576 2* selects this bank To start the colour map at $5C00, the screen start address is $5C00 (remember, it points to the colour memory) so the address is

```
0101 1100 0000 0000 =$5C00 or 23552
```

which makes VM13 to VM10 = 0111 or 7

The character definition start address (address of the bitmap) can be put at $6000 so the address is

```
0110 0000 0000 0000 0000 - $6000 or 24576
```

which makes CB13 to CB11 = 100, but in 53272, bit 0 is always set so this is 1001 Hence the value in 53272 is $79 or 121

The bitmap screen starts at $6000 the colour memory at $5C00 and the sprite pointers at $5C00+1016 or 24568

One thing to be careful of when setting up the memory is that sections of it are used for other purposes such as I/O Kernal Basic, etc and if you are running the program from Basic, you will need to be careful not to overwrite these sections If you are using machine code, the Roms can be switched out leaving Ram allowing virtually any bank to be used

Reset switches

Alan Lynne of Waverly, in Cheshire writes

Q I would like to fit a reset switch to my Commodore 64 to save switching off every time it crashes (quite often since I am still a beginner at machine code). I know it fits on to the user port but could you tell me where to get the parts and how to fit it?

A All you need is a switch, an edge connector, a soldering iron and solder Simply solder the switch to the connector and then plug it into the user port of the 64 making sure that it is the right way around (the switch should be at the top right of the socket) The switch connects to pins one and three and when pushed forces the reset line of the 6510 in the 64 causing a cold start

The parts are a push to make low cost switch (Maplin order code FH59P cost 19p approx) and a 0 156in PC Edge connector 2x12 way (Maplin order code BK74R cost £2 20 approx)

Maplin's address is Maplin Electronic Supplies Ltd, PO Box 3 Rayleigh, Essex SS6 8LR or if you have a credit card, phone 0702 552911 and order with the CC number



Linking up with MicroLink

David Wallin extolls the virtues of MicroLink's varied services

As you will have read a few weeks ago, MicroLink is part of the giant Telecom Gold Electronic Mail service It is in fact the cheapest and simplest way to get a mailbox (I ll explain mailboxes in a minute) on the Telecom Gold system In fact even getting on to Telecom Gold for free via MicroLink is very simple Many companies, including Miracle Technology and Modem House, supply MicroLink information sheets with their modems, which include £5 (registration fee) off offers When I was at the Amstrad Show the Database Publications stand had similar free joining offers (Database Publications run MicroLink) Any home business or whatever user can use MicroLink, although you are meant to be over 16 to join Access to MicroLink can be from any computer or terminal (even an electric typewriter with communications ability) with a modem operating at either 300/300 1200/75 or 1200/1200 Access is either via Direct-Dial to a London number, or via PSS All PSS numbers are given when you join MicroLink

A mailbox is just what it sounds like, a box for mail When a person leaves you some E-Mail (abbreviation for Electronic Mail) they must specify an address for the mail to be sent to This address is the recipient s mailbox number A mailbox is not a physical box of any sort, it is just a word used to refer to an E-Mail address In fact your box is part of the host computer s disc memory where data may be stored

BB E-Mail is not true E-Mail It isn't really true E Mail for four main reasons

First, E-Mail is private and may only be seen by the recipient and the sender On a BB the Sysop can see it can alter and even let other people see it

Secondly the large E-Mail services run on big computers with very large Ram and even larger disc storage space BBs (most not all) run on small micro computers with small RAM (<256K) and relatively small disc space (<1 5MB usually) This may seem large as it is in fact 1,500K but E-Mail services will have many many MegaBytes of disc space (MegaByte 1 000K (MB)) Also microcomputers are very slow compared to minis or mainframes

Also, Bulletin Boards are not multi-access (some, eg MicroGnome and Gods, are but 99% aren t) This means that only one user may be on-line at a time For a business user, an engaged line all day is hopeless if urgent E-Mail must be sent The proper E-Mail services allow many users to be on-line at one time With MicroLink there is no limit to the number of users on at one time

Lastly BBs may boast up to 4 000 or 5,000 users sounds like a lot, but with Telecom Gold, there are 53 000 users (4 000 of which are MicroLink users) and you can send E-Mail via Dialcom (see below) to 100s of thousands of people world-wide Also you can send telexes

> *"BBs may boast up to 4,000 or 5,000 users, but with Telecom Gold there are 53,000 users – 4,000 of which are MicroLink users and you can send E-Mail via Dialcom to 100s of thousands of people world-wide, and Telemessages to anyone in the UK or USA"*

to the 200 000,000 telex users world-wide and you can send Telemessages to anyone in the UK or USA (Telemessages and Telexes cost extra) So BBs don t have a large enough user base for their E-Mail to be practically useful

Put very basically, some of the E-Mail services around the world are inter-connected via the Dialcom system This means that if you are on MicroLink you can send E Mail to lots and lots of people all round the world even if they are not on MicroLink/Telecom Gold provided their E-Mail system is part of the Dialcom network

Choosing an E-Mail service to become a member of is not an easy decision, but unless you have a specific reason not to, Telecom Gold is the best, provided you join via MicroLink Not only is MicroLink on the Dialcom network, offering Telex and Telemessages but it also has Gateways, Teleshopping and more If you want to join an E Mail service the costs of the big 4 were given a few weeks ago This week there is a comparison of the registration fee for joining TG both direct from Telecom Gold, and via MicroLink. Telecom Gold direct is £135, via MicroLink it s £5 (£15 if telex required)

MicroLink comes with one very simple manual More manuals are available from Telecom Gold These are the *Electronic Mail Reference Manual* £6, *Telex reference Manual* £4, and *Quick Guide to Mail* £2

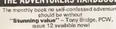
It is worth purchasing the £6 manual if you wish to use MicroLink often as it will save you money that you would otherwise spend looking round to work out what to do The Quick Guide is a nice manual and fairly useful it is in colour and contains pictures, worth considering If you have Telex then the Telex Guide is a must

A gateway is a highly sophisticated computer link MicroLink has about 7 or 8 gateways, linking it to other computers The most interesting to the home user is Mnmatics, a USA database (similar to MicroLink, but in the USA) At a surcharge of 25p per minute you can be connected directly to the Mnmatics computer in America and use 99% of its features (the ones you can t use are the gateways from Mnmatics to other American databases, such as Compuserve and the Source) Using the Mnmatics gateway is great fun, but does cost a bit (In a way PSS has gateways to services, eg MUD, Telecom Gold etc)

MicroLink lets you go Teleshopping You can buy flowers and have them sent to someone, like InterFlora', and also buy British Rail tickets and theatre tickets

MicroLink also has a Bulletin Board user-to-user chat a text editor, mail-spell check program and other features as detailed a few weeks ago

If having read all the above you want more information then contact Database Publications and they will send you some Their address is **MicroLink, Database Publications, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY (061-456 8363).**



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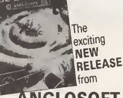
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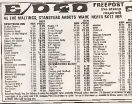
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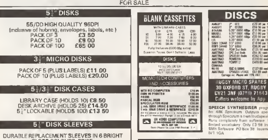
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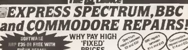
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Pick of the week

John Cook looks through this week's new arrivals

Amstrad CPC

Program *Now Games 3* **Type** Compilation **Micro** Amstrad CPC **Price** £9 95 **Supplier** Virgin Games 2–4 Vernon Yard, Portobello Road, London W11 2DX

Program *Video Poker* **Type** Simulation **Micro** Amstrad CPC **Price** £1 99 **Supplier** Mastertronic 8–10 Paul Street London EC2

Program *The Apprentice* **Type** Arcade/Adventure **Micro** Amstrad CPC **Price** £1 99 **Supplier** Mastertronic 8–10 Paul Street, London EC2

Program *The Inheritance* **Type** Adventure **Micro** Amstrad CPC **Price** £9 95 (tape) £14 95 (disc) **Supplier** Infogrammes Mitre House Abbey Road Enfield, Middlesex EN1 2RQ

After something of a slow start in this country with *Mandragore*, Infogrammes did considerably better with *Vera Cruz* Now another program that will do their reputation no harm at all *The Inheritance*

In three parts, the game places you in the position of receiving news of your Aunt's death – together with $200 and a plane ticket to Las Vegas plus the information that you will inherit her whole fortune if you can repeat her achievement of winning one million dollars in one evening at the tables of Sin City

First you must get out of the building to the waiting taxi, avoiding and placating your many creditors in the building, then on to the airport, and finally the chips are down at the gambling tables

The Inheritance expands on *Vera Cruz*'s use of an on-screen cursor as a means of exploring and manipulating a graphic environment, in that it is totally under cursor control, but far from making the game simple it tests your ingenuity to the limits In short, another well crafted off-beat number for those with an adventurous spirit

Atari ST

Program *K-Comm 2* **Type** Utility **Micro** Atari ST **Price** £49.95 **Supplier** Kuma Computers, 12 Horseshoe Park Pangbourne, Berks

Program *K-Word* **Type** Utility **Micro** Atari ST **Price** £49 95 **Supplier** Kuma Computers 12 Horseshoe Park, Pangbourne Berks

Program *K-Switch* **Type** Utility **Micro** Atari ST **Price** £29 95 **Supplier** Kuma Computers 12 Horseshoe Park, Pangbourne Berks

Program *Starglider* **Type** Arcade **Micro** Atari ST **Price** £24 95 **Supplier** Rainbird Software 64–67 New Oxford Street London WC1

BBC/Electron

Program *Stryker's Run* **Type** Arcade **Micro** BBC B **Price** £9 95 (tape) £11 95 (disc) **Supplier** Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX

Program *The Mystery of the Lost Sheep* **Type** Adventure **Micro** BBC B **Price** £4 00 **Supplier** Central Computing 61 Beech Road, Gillway Tamworth Staffs B79 8QD

BBC Master

Program *Stryker's Run* **Type** Arcade **Micro** BBC Master Compact **Price** £14 95 (disc only) **Supplier** Superior Software Regent House Skinner Lane, Leeds LS7 1AX

C16/Plus 4

Program *Finders Keepers* **Type** Arcade **Micro** Commodore 16/Plus 4 **Price** £1 99 **Supplier** Mastertronic 8–10 Paul Street, London EC2

Program *Terra-Cognita* **Type** Arcade **Micro** Commodore 16/Plus 4 **Price** £1 99

A forceful light

Program *Lightforce* **Type** Arcade **Micro** Spectrum **Price** £8 95 **Supplier** FTL, Sedgley Road East Tipton West Midlands DY4 7UJ

FTL is Gargoyle's arcade label of course, and *Lightforce* its first release You might have caught the preview of the Desert Planet stage at the PCW show and couldn t fail to be impressed by the thing The good news is that the finished version is even better

More and more, Gargoyle are beginning to wear the mantle that Ultimate left in lost property last year and haven't bothered to get back in that they are consistently breaking new ground on the Spectrum – forcing the machine to do things you'd never expect This time, it s full colour shoot em up

I'll run the fundamentals past you again Spectrum shoot em up, full colour And forget about attribute clashes too, as the combination of excellent design and programming has knocked that problem firmly on the head

The gameplay is classic arcade up/down, left/right, fire like made lots of fast circling aliens – and I predict that

Eskimos will be pawning their thermals to get their hands on this one

Supplier Code Masters 1 Beaumont Business Centre, Beaumont Close, Banbury, Oxon OX16 7RT

Commodore 128

Program *Thai Boxing* **Type** Arcade **Micro** Commodore 128 **Price** £11 95 (disc only) **Supplier** Anco Software, 35 West Hill, Dartford, Kent DA1 2EL

Program *Strike Force Cobra* **Type** Arcade/Adventure **Micro** Commodore 64 **Price** £8 95 **Supplier** Piranha, 4 Little Essex Street, London WC2

Vanity is a terrible thing When this program came in and we loaded it up there were great hoots of laughter as the screen with your selection of commandos came up Yes, I was there along with other hacks – and my nose isn t really that big Honest

The story is a Mission Impossible save the world from the evil genius', job – and after selecting your team of four from the Rogue s Gallery on offer (exactly which four you choose doesn t matter a jot incidentally – but I guess it does add a bit to the atmosphere), away you go in respectable, rather than stunning 3D

Each of the commandos starts in a different location on the first level of the complex, and although you can only control one character at a time it s a simple matter of one key to swap over

Mapping and good timing are essentials, as you move your strike force around the three levels of the complex, kicking in doors, jumping through windows lobbing

stun grenades at robots and generally have a really good time

Lots of action combined with some thought if you're the sort of Headbanger that enjoyed the mayhem and murder of *Saboteur* chances are you'll go for *Cobra*

Commodore 64

Program *Now Games 3* **Type** Compilation **Micro** Commodore 64 **Price** £9 95 **Supplier** Virgin Games 2–4 Vernon Yard, Portobello Road, London W11 2DX

Program *Thai Boxing* **Type** Arcade **Micro** Commodore 64 **Price** £7 95 (tape) £9 95 (disc) **Supplier** Anco Software, 35 West Hill, Dartford, Kent DA1 2EL

Program *Red Max* **Type** Arcade **Micro** Commodore 64 **Price** £1.99 **Supplier** Code Masters, 1 Beaumont Business Centre, Beaumont Close, Banbury Oxon OX16 7RT

Program *BMX Simulator* **Type** Arcade **Micro** Commodore 64 **Price** £1 99 **Supplier** Code Masters, 1 Beaumont Business Centre, Beaumont Close, Banbury Oxon OX16 7RT

Program *Strike Force Harrier* **Type** Simulation **Micro** Commodore 64 **Price** £9 95 **Supplier** Mirrorsoft Purnell Book Centre Paulton, Bristol BS18 5LQ

Program *Deactivators* **Type** Arcade **Micro** Commodore 64 **Price** £9 95 (tape) £14 95 (disc) **Supplier** Ariolasoft 68 Long Acre London WC2

Program *Jack the Nipper* **Type** Arcade/Adventure **Micro** Commodore 64 **Price** £9 95 **Supplier** Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS

Program *Captain Kelly* **Type** Arcade/Adventure **Micro** Commodore 64 **Price** £8 95 **Supplier** Quicksilva Argus Press Software Group Victory House Leicester Place, London WC2

Program *Hopeless* **Type** Arcade **Micro** Commodore 64 **Price** £9 95 **Supplier** Ariolasoft, 68 Long Acre, London WC2

Program *The Legend of Sinbad* **Type** Arcade/Adventure **Micro** Commodore 64 **Price** £9 95 (tape) £11 95 (disc) **Supplier** Superior Software, Regent House Leeds LS7 1AX

Program *Bazooka Bills* **Type** Arcade **Micro** Commodore 64 **Price** £9 95 **Supplier** Melbourne House, 60 High Street, Hampton Wick, Kingston upon Thames, Surrey KT1 4DB

Spectrum

Program *Now Games 3* **Type** Compilation **Micro** Spectrum **Price** £9 95 **Supplier** Virgin Games, 2–4 Vernon Yard, Portobello Road London W11 2DX

Program *Zythum* **Type** Arcade **Micro** Spectrum **Price** £7 95 **Supplier** Mirrorsoft Purnell Book Centre Paulton, Bristol BS18 5LQ

Program *Storm* **Type** Arcade **Micro** Spectrum **Price** £1 99 **Supplier** Mastertronic 8–10 Paul Street London EC2

Program *Vampire* **Type** Arcade/Adventure **Micro** Spectrum **Price** £1 99 **Supplier** Code Masters 1 Beaumont Business Centre, Beaumont Close Banbury Oxon OX16 7RT

Program *Captain Kelly* **Type** Arcade/Adventure **Micro** Spectrum **Price** £8 95 **Supplier** Quicksilva Argus Press Software Victory House Leicester Place, London WC2

QL

Program *Ambition* **Type** Strategy **Micro** QL **Price** £29 95 **Supplier** Care Electronics 800 St Albans Road Watford Herts

Confused? Read this...

The launch of Amstrad's PC1512 has really set the cat among the pigeons If you are a major consumer of the computer press, you have no doubt read at least 16 contradictory opinions already

The main arguments go like this (1) It will sell to business users who want a cheap IBM-compatible (2) It won't sell to business users because they'd rather have the comfort of buying IBM (3) It will sell to home users because there's tons of games software available (4) It won't sell to home users because the game software costs about £40 a shot (5) It will sell because, like all Amstrad products, it represents established technology at low cost (6) It won't sell because it's old and boring and you can get a really exciting Atari ST for around the same price (7) Software prices will have to fall because nobody's going to pay £300 for a program to run on a £400 computer (8) Software prices can't fall because the £300 price allows the dealer to give full support, training, cups of cocoa, etc. Anyway, if you charge £99 for the package, the whole industry will be bankrupt in 12 months/by Christmas/before nightfall

Confused? I'm not surprised Let's knock off the easy ones first Like the games gabble

You will read in many places that there is tons of games software for the IBM PC, and therefore for the PC1512 Well, it just ain't so Joe Yes, there's a fair bit, but the vast majority of it is already available on machines like the Spectrum Commodore 64 Amstrad CPC range, et al

So, you'd have to be some kind of nerk to buy a PC1512 and then shell out £30 for a game that works – and probably works better – for a tenner on a machine costing only £150

So if games players aren't going to buy it as a games machine, who will buy it, and what for?

> *"If games players aren't going to buy the PC1512, who will buy it, and what for? 'Small businesses, John,' mumble the pundits with a nod and a wink Well, maybe"*

Small businesses, John," mumble the pundits with a nod and a wink Well, maybe But this is where we really get into that software argument

I'm with the 'cut-price' lobby here I don't see many PC1512 owners queuing up for dBase III at £315 Paradox at £458, Framework at £321 Displaywrite at £418 or Lotus 1-2-3 at £242

What do you mean, you don't want that stuff? This is what it's all about When people talk about the benefits of IBM compatibility this is what they mean

And if you're planning on paying less for 'similar' software, why are you thinking about IBM compatibility anyway?

There are perfectly adequate word processors, and databases and spreadsheets for the PCWs at prices a fraction of those quoted above

So, obviously, the software companies will drop their prices Ho ho

Trouble is, I'm also with the no cuts lobby here There is no way the software majors are going to chop their prices by 60 per cent just to further the Alan Sugar success story

Now if you're anything like me at this point you'll be admiring the skill and effort that went into making the 1612, and thinking that if you were in the market for a machine of this ilk, the PCW8512 looks pretty good to you

But Amstrad has already got its money back – and more – from the PCWs It hasn't made a penny on the PC1512 If you're still anything like me you're probably thinking the future doesn't look too good for the PCWs

Cynical, I know but I urge caution dear readers

Because the cat is indeed loose and you're ever, are the pigeons

Peter Worlock

NEXT WEEK

Hardware

The re-vamped Tatung Einstein 256 – with CP/M it could be the colour answer to the Amstrad PCW We put it through its paces

Plus 2 unveiled

Andy Pennell takes the lid off the latest Spectrum and reveals what surprises may lurk therein

Movie quiz

The very last part of our great competition If you missed an instalment in the last few weeks, don't worry – we'll be printing all of the pictures again, plus the entry form Remember, we've got five Spectrum Plus 2s, ten Star STX-80 printers and 50 Magnum joysticks to give away

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